

**Learning
and
the**

Teacher

**ASSOCIATION FOR SUPERVISION
AND CURRICULUM DEVELOPMENT, NEA**

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**Learning
and
the
Teacher**

1959 Yearbook

Association for Supervision and Curriculum Development
A department of the National Education Association
1201 Sixteenth Street, N. W., Washington 6, D. C.

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ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT

*A department of the
National Education Association of the United States
1201 Sixteenth Street, Northwest
Washington 6, D. C.*

Price \$3.75

The Library of Congress has catalogued this publication as follows:

Association for Supervision and Curriculum Development.
Yearbook. 1944-
Washington.

v. illus., diagrs. 24 cm.

Each volume has also a distinctive title.
Vols. for 1944-45 issued by the association under its earlier name:
Dept. of Supervision and Curriculum Development of the National Education Association.

1. Education — Curricula — Yearbooks. 2. School supervision — Yearbooks.

LB2804.A8	370.58	44-6213 rev 3*
Library of Congress		

From the Association

HUNDREDS of scientific studies on learning and related topics have been conducted and findings reported during the past fifty or more years. As a result, much potentially useful information about the learning process is available. It is encouraging to know that many of the most effective teaching and curriculum practices throughout the country have come about as a result of thoughtful examination of research findings on learning and related topics, and through continuous evaluation of outcomes of the educative process.

But even with an accumulation of scientific information on learning available, leaders in the field are cognizant of the fact that many important teaching-learning tasks are not easy to perform. Lack of widespread knowledge about the findings and limited understanding of what they mean in relation to teaching and curriculum tasks are among the factors that tend to retard improvement in practice. As two of the authors of this book say, ". . . much of educational psychology, especially if 'learned' for examinations before experience in the classroom, does not readily function in the teacher's daily life."

From a number of different points of view, the authors of this book describe and interpret what they see in the classroom setting itself of better ways of helping children learn.

The members of the Association for Supervision and Curriculum Development are especially indebted to David H. Russell and Sybil K. Richardson for their leadership as co-chairmen of the 1959 Yearbook Committee and for their work as authors of certain chapters of the book. The Association also expresses thanks to other authors, who wrote chapters for this volume: Guy T. Buswell, John Goodlad, Julia Weber Gordon, Murray M. Horowitz, Henry C. Lindgren, Carol Smallenburg, Faith W. Smitter, Abraham Shumsky, and R. Murray Thomas.

Learning and the Teacher should be a useful source for teachers and other curriculum workers who want to increase their knowledge and understanding of the teaching-learning process.

Several other persons assisted in reading, evaluating and producing this volume. Donald McNassor, Claremont College, and Lee Cronbach of the University of Illinois helped in the critical review of certain chapters. Arthur W. Foshay served as continuing representative of the ASCD Executive Committee in relation to this yearbook. All members of the Executive Committee read and commented upon the original manuscript. Alice Miel, chairman, and Galen Saylor, chairman-elect, of the ASCD Publications Committee, read and reacted to the manuscript.

Rodney Tillman, executive secretary of the Association, read and commented upon the original manuscript. Robert R. Leeper, editor and associate secretary, ASCD, worked with the original manuscript, did final editing on the volume and directed its production. Florence O. Skuce, of the NEA Publications Division, assisted in paging, proofreading and other aspects of production. Lounell G. Vonland, ASCD assistant, typed and duplicated the original drafts for reading. Ruth P. Ely, ASCD editorial assistant, secured permissions to quote. Cover and title page are by the NEA Publications Division, Kenneth B. Frye, artist.

November 1958

JANE FRANSETH, *President
For the Executive Committee*

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Preface

IN OCTOBER 1956 the ASCD Executive Committee, upon recommendation of the Publications Committee, appointed a committee to develop the ASCD 1959 Yearbook. "Learning and the teacher—an analysis of the nature of learning and its implication for educational workers" was suggested as a theme. The Executive Committee indicated several key ideas for the committee's consideration.

1. An attempt would be made to draw out some principles of behavior change or ideas about learning that appear to have considerable validity. This might be done by presenting realistic situations from which generalizations about learning could be derived. This definitely would not be another attempt to describe, compare, and contrast different theories about learning. Such treatment of learning categories or various theories of learning should be avoided. Rather, it would seek to identify concepts most useful to school people.

2. Some attempt probably should be made to annotate the basic research upon which our insights rest.

3. A central idea is that of seeing the individual in the group as he is learning—the psychological and sociological context within which learning occurs; the person reacting within his environment.

4. The teacher's role in the behavioral development of the child and the difference between being physically and psychologically in an environment should be pointed out.

5. Many kinds of applications should be made for a wide audience range—teachers, supervisors, and others at all levels.

6. There should be an analysis of the conditions that appear best to promote learning and those that produce tensions and thus inhibit learning.

The committee was given much freedom and responsibility in designing a framework to synthesize these ideas.

Through correspondence and in work sessions at the ASCD Conference in St. Louis, the committee reached some consensus regarding the need and the plan for the yearbook and its possible content.

There was agreement that the teacher has been given too much theoretical psychology and too little educational psychology—too many books focused upon principles of psychology rather than upon the job of teaching. The 1959 Yearbook would fill a pressing need to the extent

that it could deal with such specific aspects of the teacher's role as that of planning and organizing learning sequence, selecting emphases in content and activity, or in managing forces within the classroom.

In formulating this statement of purpose, the committee was mindful of the changed intellectual climate of the country and the resulting contemporary challenge to education and educational psychology. In past decades the influence of the pupil's personal growth and mental health upon his learning has been steadily clarified. Without denying or ignoring this aspect of teaching-learning, it seemed desirable to throw emphasis upon systematic skills used by teachers in stimulating children's intellectual development. The outline for the 1959 Yearbook thus spotlighted the teacher in action carrying out the many activities inherent in the guidance of learning especially cognitive functions.

As each author developed a chapter, copies were sent to several reviewers whose reactions and suggestions were summarized for the entire committee. Many authors made extensive additions and revisions on the basis of these critiques.

At this point and during the ASCD Conference in Seattle, the committee faced with uneasiness the possibility that emphasis upon the teacher's role had been overplayed. The yearbook was not intended to imply that the teacher is sole director and determiner of learning or that the teacher uses skills to accelerate meaningless impersonal learnings. Committee members reiterated their conviction that experience is unique and that learning is highly personal. The learner and his abilities, values, needs, feelings, and self-concept are predominant in experiencing and learning. Accordingly, the teacher's role encompasses sensitivity to these influences as well as attention to methods by which skills, understandings and attitudes are developed.

Upon completion of its work, the committee is far from satisfied with its efforts. But this volume is an honest attempt to bring together ideas which teachers may use directly or with supervisors in their cooperative efforts to improve children's learning. This is not the whole story of the teaching-learning process. It emphasizes, however, the teacher's task in applying what is now known about learning and in extending insights about learners in action.

November 1958

DAVID H. RUSSELL

SYBIL K. RICHARDSON

For the Yearbook Committee

Part I

Introduction

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CHAPTER ONE

Learning about Learning

Sybil K. Richardson

David H. Russell

LEARNING IS the central concern of the school. Buildings are built, books written, curricula planned and teachers prepared, all that children may learn. From day to week to month, teachers plan, pupils work, books and other materials are written and used, tests are given, a hundred activities are undertaken, all in the belief that learning is the predominant function of the school.

A Point of View

Since teachers plan for learning day after day, many of them know a great deal about how learning takes place. They know that students vary widely in their abilities to learn and that, even in primary grades, a tremendous variety of learnings is expected. A seven-year-old, for example, is expected not only to learn reading, writing and spelling skills, but to comprehend the general ideas, to grasp certain facts or to follow specific directions in written passages. He is expected also to develop understandings about his community and the scientific phenomena about him. He is expected to begin to master such quantitative concepts as cardinal numbers and such processes as subtraction. He is expected to be somewhat independent in his own work and yet cooperative with others. A teacher of seven-year-olds knows that all these learnings are the usual expectations of parents and the child himself.

Although most teachers are aware of the range and complexity of learnings demanded in the school curriculum, not all are as certain about the learning process itself. What happens as the child learns—as he acquires new skills and understandings? What conditions promote efficient learning and what personal characteristics or group influences tend to accelerate or to retard learnings? Many teachers, both elementary and secondary, who give wise guidance in learning are unable to describe just what they do. Some can share what they do with new teachers; others cannot. Many teachers have learned from difficulties over the years that some practices are not conducive to efficient learning—that, for example, a carefully prepared lesson may “fall flat” if it does not grow out of the learners’ genuine concerns. Sometimes the goals of learning are not reached and the teacher is uncertain about the reasons. In other words, both the successful teacher and the one encountering difficulties need to know more about learning. Most teachers would like to improve their professional competence by increased understanding of the learning process which is so vital to their work.

Many teachers have some acquaintance with theories of learning. They have had at least one course in educational psychology as part of their professional training. They have learned something about the laws of learning or such descriptions of learning as “conditioning” or “insight.” They may include “reinforcement” and “level of aspiration” in their vocabularies. But such ideas often do not seem closely related to day-by-day work with children or adolescents. Some examples in the psychology text, for instance, may be derived from animal psychology and the teacher is unable to relate the behavior of rats in mazes to that of Johnny or Alice in learning long division. Experimental psychologists have not ordinarily been concerned with learning as it occurs in the classroom. This does not mean that educational psychology is useless. Often it gives valuable examples and hypotheses about children’s learning and is especially enlightening to the experienced teacher. It does mean that much of educational psychology, especially if “learned” for examinations before experience in the classroom does not readily function in the teacher’s daily life.

What are the alternative solutions? One suggestion is that experimental psychologists, anthropologists, sociologists and others give more study to educational problems encountered in schools. In place of this interdisciplinary and perhaps somewhat theoretical attack, this yearbook attempts a second approach to the problem. Instead

of starting with some laboratory experiments or with some "laws" of learning and illustrations, it begins with the work of teachers and from this derives ideas and concepts about learning. Instead of giving an historical or systematic analysis of knowledge about learning, it attempts to find in the classroom setting itself better ways to help children to learn. Instead of quoting valuable but isolated research studies, it presents typical activities in the daily work of teachers and points out the kinds of learnings that may take place and the influences which hinder or help the process. Instead of having teachers rely on "book learning" alone, it suggests that careful analysis of teaching activities in the classroom, especially when accompanied by knowledge of research literature and participation in research activities, adds greatly to understanding of the learning process.

The writers of this yearbook do not intend it to replace the conventional texts in educational psychology, but to supplement these. All kinds of educational research are desperately needed and both theory and practice have a role in the improvement of instruction. There is, however, an immediacy and a reality about the classroom situation. How can the busy teacher combine knowledge of individual differences, understanding of the needs of children or youth, and insights into the dynamics of groups with demands for "covering" a subject or getting youth over the hurdle of tests and entrance requirements?

This yearbook tries to suggest fresh applications of the psychology of learning to teaching. The creativity which results in good teaching demands more than knowledge of good practice in the past. Teachers today must adapt and change with the new conditions of children's lives, with the new needs and demands of the culture and with new understandings of how children learn. The writers of this book believe that these insights may emerge from analysis of the teaching process itself; that from study of classroom activities, counseling with individuals, and conferences with colleagues can come clues to creating effective learning situations.

Plan of the Yearbook

In presenting the problems of teacher-pupil learning, this yearbook is first concerned with the learner himself. Chapter Two draws from knowledge of child and adolescent development and Appendix A suggests further sources for study. A *person* is doing the learning, whether bright or dull, social or solitary, highly motivated or scornful

of school "stuff." The child or adolescent is accordingly a primary concern in any discussion of the learning process.

The longest portion of the yearbook, Part II, presents the various phases of the teacher's work in the classroom and, from these, derives concepts about the learning process. Several of these chapters include descriptions or transcripts of classroom activities with discussion focused on the learnings that are taking place. The many facets of the teacher's role are highlighted in the five chapters describing teachers in action.

Part III of the yearbook looks at the same kinds of teacher activities from different vantage points. It says, in effect, that teachers can learn about learning, not only from classroom activities but from study of educational psychology and of research. Accordingly, it first discusses in Chapter Eight the concept of "learning how to learn" which runs through all the chapters of Part III as a unifying idea for much of the learning activities in the classroom. In addition, it suggests in Chapter Nine and Appendix B how teachers learn about learning from the literature in the field. It expresses the belief that understanding and change in teaching practices come not only from the study of children (Chapter Two) and from study of teaching (Part II) but also from understanding and using the scientific writing about learning in general and about learning subject matter. Finally, it proposes, in Chapter Ten, that teachers can learn about learning not only by analyzing classroom behavior and by studying published research, but by taking part themselves in action research on learning problems.

In Parts II and III of the yearbook the reader will note in the several chapters different points of view about the psychology of learning. Every writer has philosophical and psychological guides which influence his ideas directly or indirectly. In the present volume, for example, one may contrast Chapter Three with Chapter Seven or Chapter Eight. A good yearbook should probably not attempt to erase such differences. Indeed, the editors of this book believe that the varying points of view implicit in the various chapters may add interest to the book and create challenge for the reader.

Illustration of Method of Yearbook

Especially in Part II, this yearbook attempts to develop inductively concepts about learning. Instead of general statements about planning, diagnosing, motivating, and providing for differences among

learners and other phases of the teacher's work, followed by a few illustrations, it attempts to make "task analyses" of classroom activities and from these derive some concepts about learning. The expressions, "generalizations about learning" and "laws of learning," are therefore avoided. The authors are convinced of the importance of such topics as learned motives and the transfer of training but they are not ready to generalize about these as true of most individuals or most groups of children. Instead, they have set the more modest goal of discovering and examining some ideas or concepts about learning that seem to apply to some children and to some teachers in some classrooms.

To do this, the yearbook committee collected transcriptions of classroom activities and counseling situations in which learning might be observed. Some authors collected other illustrations and from these traced inferences for the teacher's knowledge of the learning process. The following are four examples of the material used in planning the organization and content of the yearbook and in deriving some concepts about learning in classrooms.

The Teacher Selects, Plans, Organizes¹

Introduction. The following transcript summarizes several days' work in a sixth grade in Los Angeles County as the class moves from a study of Mexico to that of Canada. Note how several possibilities are considered and how plans are based on materials available to the class. In one sense readiness activities are a preparation for learning but they also involve learnings of their own. What kinds of learnings occurred in the following episodes?

The teacher says, "You seem to have enjoyed studying the lives of the early explorers and settlers who came to Mexico. Who were the people who explored other parts of the New World?"

The youngsters theorize something like this:

Some Spaniards went to South America.

Just exactly where did they settle? South America has an awful lot of countries. Did they settle all of them?

I think they went to Brazil.

How about the western side of South America? Who first settled there?

Last year we learned that the Spanish helped to settle the United States.

Many English people came here too.

The French went to New Orleans.

¹ See Chapter Three.

As the children talk about the different parts of the Western Hemisphere which had been explored and settled by the Spanish, English and French they use a map to locate these areas. In looking at the map they are reminded of the wide expanse of Canada and discussion continues:

How about Canada? Canadians speak English. Canada must have been settled by the English.

I thought some Canadians spoke French. I read *Petite Suzanne* just a few weeks ago and she was a French-Canadian girl.

Weren't there some French people in the story of *Silver Chief*?

The teacher comments, "We seem to have several questions about the early explorers and settlers who came to the New World. I've tried to keep track of them on the board as you were talking. Jim, would you like to review them for us?"

Jim reads the questions aloud:

What other countries in South America did the Spanish explore and settle?

Did they settle all of them?

Did they settle Brazil?

Who explored and settled the western coast of South America?

Did the English explore and settle Canada?

Did the French explore and settle Canada?

The teacher then asks, "How can we organize our questions?"

Connie suggests, "Well, we have four questions about South America and two about Canada. We could put the questions relating to South America together and the two about Canada together."

After a pause the teacher asks, "Is there any other way that we might organize our questions?"

Archie thinks of another way and says, "We could divide them into groups of explorers, like French explorers, English explorers, Spanish explorers."

No other suggestions are offered. The next step, then, is to decide whether to divide into two committees, one to study Canada and one South America, or into three committees based upon the three major groups of explorers, the English, the French and the Spanish. To help the children consider the advantages and disadvantages of the two procedures the teacher suggests that the class take a quick look at the way the indexes of the various reference books are organized. This might give them some clues as to which committee approach would be easier.

The class agrees and decides to look under two different types of index headings.

1. The exploration of peoples from different countries. For example:
"French Explorations" or "Explorers"
"English Explorations" or "Explorers"
"Spanish Explorations" or "Explorers."
2. The different countries in the Western Hemisphere like:
"Canada"
"Brazil."

Because the references are organized chiefly in terms of the three major peoples who explored Canada and South America, the class agrees to divide into three committees, each taking a different group of explorers to study.

Four of the youngsters want to approach the problems by doing individual reading. The two children who had mentioned *Silver Chief* (Jack O'Brien) and *Petite Suzanne* (De Angeli) in the first discussion want to refer to these books again to substantiate their statements. Two others want to read about the early exploration of Brazil.

The first task of the committees is to meet together and plan who will use the various references. As the children read, they take brief notes of things they want to remember and questions which they want to raise. After they finish their brief research the entire class meets together to share information and problems. Some of their problems are:

Let's find out more about the explorations of Balboa, Pizarro, and Magellan in Latin America.

Let's find out more about the explorations of Champlain, Hudson, and LaSalle in Canada.

Why did people from Europe want to settle in these strange new places?
How many children came?

Why did people settle where they did and not in some other spot?

How did the early settlers make a living?

Did the children have to work or did they go to school?

How did the early settlers travel?

Are Canadians and South Americans of today like the early Canadians and South Americans?

Has their language changed much?

Do they do the same kinds of work?

When do the children start school?

The class decides that it would be too complicated to try to study

the settlement and development of several countries at once. The children are particularly interested in the people of Canada and Brazil. They agree to study the Canadians first and return later to learning more about the settlement and development of Brazil.

The class takes a look at its questions and finds that they fall into three areas of interest: explorers, settlement, and comparison between the early and modern Canadians. They decide to divide into two committees, one to investigate explorers and the other to study the settlement of Canada. They feel that they need to learn more about Canada and its people before they try to compare life today with that of the early days.

The class also discusses what questions each committee should study. They agree that Committee 1 should try to discover:

1. Who were the major explorers?
2. What parts of Canada did they explore?
3. Why were they exploring Canada?
4. What were the results of their explorations?
5. What kinds of adventures did they have?
6. What kinds of boats did they use?

And they decide that Committee 2 should try to find out:

1. Who were the early settlers?
2. Where did they settle and why did they select the location?
3. Why did they leave their homes to come to Canada?
4. How did they make a living?
5. What methods of transportation did they use?

As the study progresses the teacher thinks about other ways in which she might integrate more of the interests and experiences of the youngsters. She considers the possibility of utilizing the free reading activities of the group. This might also serve to help the children build an understanding of present-day life in Canada.

She surveys the free reading records of the class to see if any of the children have read books with plots laid in Canada. She finds Martha's report on *Gay Madelon* (Ethel Phillips) and Jerry's report on *Philippe's Hill* (Lee Kingman). She asks these two youngsters if they will give a review of these books for the class. They agree.

After Martha and Jerry have given a brief rundown of the stories, the teacher extends the group's thinking by asking these questions:

What kind of work did the people do?

In what locale was the story laid—climate, topography?

How did the family work together?

What were the people's feelings about each other?

What did they do for recreation?

How does their way of living compare with ours?

The teacher brings out a number of other storybooks about Canada. She introduces several to the class with brief comment. The class librarian takes over the job of keeping a record of books that are checked in and out.

The Teacher Introduces Learning Tasks²

Introduction. This second example is included partly because of current interest in science and in providing for superior children. Although it records the discussion of a second grade group it is perhaps more typical of fourth grade children's interests and use of encyclopedias. However, all teachers are aware that the modern child is more sophisticated than his counterpart a generation ago. Perhaps all second graders are concerned about the universe these days. Certainly the transcription illustrates the wide reaches of superior children's curiosity and how the teacher guides this in beginning a new unit of work. Is this planning session an experience in learning how to learn (see also Chapter Eight) through recording materials and experiences for future use?

Discussion

Teacher: Could you offer some questions we might find answers for in our study? Later on, we will call on you to help us out with the answers, but now what are some of the things you think we ought to know? One question boys and girls might ask would be: "What are the planets and how are planets formed?" That would be one of the questions for us to find out.

Margo: My name is Margo and I wanted to know how the moon got to be so high.

Teacher: In other words you want to know how the moon happens to be able to get light back to the earth? That's a very good question. Who else has one?

Karen: I know the answer to that.

Teacher: Perhaps we ought to think of

Comments on Procedures

The teacher gives an example to help the warm-up process.

Too much re-direction²

² Second grade, Miss Dypka, University Elementary School, Ann Arbor, Michigan. See Chapter Four.

other questions now. We'll think of the answers as we talk about the different things.

Bojo: I want to know how gravity pulls.

Teacher: What causes gravity to pull us? What is the pull of gravity?

Girl: How does a planet get formed?

Teacher: How are the planets formed? That's another question for which we want to find an answer.

Jane: I want to know how the sun got so hot.

Teacher: Jane wants to know what causes the heat of the sun and probably a little bit about the beginnings of the sun.

Sharon: I want to know how it looks on Mars.

Teacher: Sharon wants to know a little bit about the appearance of Mars—how it looks on Mars—if we were actually there.

Boy: I want to learn how the stars are in the sky.

Teacher: How stars got in the sky. Another good problem for us to work on—how stars were made was suggested by Lynn.

Sally: How are stars shaped?

Boy: I would like to know how the stars pull off stuff from the sun.

Teacher: That's a good question to consider.

David: How long do stars stay up in the sky?

Teacher: Are there any other boys and girls who have ideas we can work on all through our units?

Martha: I want to know how the Big Dipper shows where the North Star is. How do you tell?

Girl: Is it day all night on Mars and Jupiter?

Teacher: You wonder whether they have any night and day on the planets, for example, like Mars or Jupiter?

Karen: How does the sun help plant flowers?

*Pupils suggest problems
and teacher records them
for future reference.*

Boy: 'Cause if it's cold, it will kill at the plants.

Teacher: Well, perhaps we had better save that and talk about it a little more, shall we? What I was wondering too, boys and girls,—you might put your hands down a minute and think about this—are there questions you want to ask specifically? Are you more interested in planets or are you interested in stars or in all the universe?

Chorus: All the universe!

Teacher: The thing is this: when we say all the universe, we wonder whether we can possibly study the whole universe in our short time. Can we?

Chorus: No.

Teacher: Well, where would be the most important place for us to start?

Karen: The sun.

Teacher: Well, what is it you want to know about the sun?

Karen: I want to know how it got on fire, —whether it's really on fire.

Teacher: For instance, you're probably interested in the very early start of the universe? Is that it?

Karen: I want to know how it got on fire, if it is.

Teacher: That's a very good question. I'm going to go back to Bojo for just a little bit. I'm going to ask the others to listen to what Bojo can add to this. I think, Bojo, you began the part about the pull of gravity breaking off the different bodies which were hurled into space.

Bojo: Yes.

Teacher: Will you continue with that? Perhaps we might get some ideas from there too.

Bojo: All right. The sun's gravity keeps holding them back. That's how they got their orbits.

Teacher: Tell us a little bit about what you mean by orbit.

Bojo: That's the course that the planets

The teacher helps the group focus on some specific problem.

A concept children should have these days.

take when they move around the track. I'll tell you something of what the course is. Now, way over here, the sun's gravity pulls them just past it. That's something like the orbit of the planets. (A demonstration was being given visually here.)

Boy: You mean it gets started from here—something like that?

Bojo: Yes.

Teacher: Bojo, I was wondering if you and your Daddy tonight at home could work out something either by using strings and little balls to show us what we mean about the orbit of a planet around the sun? Do you suppose your Daddy and you tonight would plan something out together and you can bring it to school tomorrow to show it?

Bojo: He might type out some reports that could be put on the ditto machine for us all to have.

Teacher: It might be a good idea, too, Bojo, for your Daddy to write in simple words. It would be easier for us to read.

David: We could go to the observatory.

Teacher: Well, probably in order to go to the observatory—now there's a good suggestion. Now we have found two ways of learning more about the Universe. First, Bojo's father will give us some information. Now David's father is at the observatory and he has told me that we are welcome to come out there. But do you think maybe having a little bit of information first would make us understand what we see at the observatory better? How many think it might? How would it be if we plan on a trip next week to the observatory?

Chorus: Yes. (Enthusiastically)

Teacher: We'll use the university bus in order to go. Yes, the university bus driver knows where it is. (This in response to a mumbled question.) Who knows about another way to get information about these questions we have? We've mentioned Bojo and his father to help us out. All right, teachers will help us out, the observatory, encyclopedias—that's

Learning activities may make use of new tools to avoid laborious routine.

Most planning requires this reminder from the teacher.

A challenge to the gifted reader or junior scientist.

right. Who knows where we have our encyclopedias in the room? Do you know where they are?

Chorus: Some yes, some no.

Teacher: Well, now, who in our room will make it his job between now and tomorrow at unit time to find all the different pages where the information is given?

Boy: If you would let me take it home, my mother would help me with it.

Teacher: Well, we would like you to do this in school time. I think that's worth-while use of school time, don't you? Karen, can you choose two other folks to serve on that committee with you?

Shelley: I don't want to go and observe but I want to tell you something else.

Teacher: Wait just a minute, Shelley. Call someone quickly, Karen, so we can let those people know.

Karen: Eugene.

Teacher: Eugene is one. Who is the other?

Girl: I am.

Teacher: All right, you three are responsible. So there we have a trip to the observatory, we have Bojo and his father planning something together and looking through the encyclopedia. I know of something the teachers have told me already that they have on hand to share with you beginning tomorrow, which might give us information about the unit on the Universe. Who can think what it might be? Karen, can you tell us?

Karen: How the planets got their names?

Teacher: Yes, how planets got their names is another good problem. What might be another way of finding out all those things? We said the books could tell us—encyclopedias and other books.

Boy: Dictionaries.

Teacher: Well, dictionaries give us meanings of words. If you can answer this question, fine, otherwise please wait a few minutes. What about movies and filmstrips—will they give us information?

There's at least one Shelley in every group!

The teacher begins to pull the discussion together.

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Girl: Yes, and I've got a filmstrip about Mars.

John: We have a whole book of everything.

Teacher: Could you bring that?

John: From A down to—through the whole alphabet.

Boy: We have 36 books and I could bring the one about the universe. What does universe start with?

Teacher: U.

Boy: I think we have U, U, U, U,—nothing else but U.

Teacher: Anything else we can suggest, in addition to this? Karen, did you have something else to suggest?

Karen: Couldn't we get some books from the library?

Teacher: Well, our teachers have a group of books. This morning I had Rocky and someone else help me find some books down there too. David?

David: Well, one day my father went in the air in a rocket to Mars and when he came back, he brought a map showing what Mars looked like.

Teacher: He has some information? All right. How many have *National Geographics* at home? Look through all of them and see if you can find things about the universe in them too.

Boy: I'll bring—(Drowned out by many children volunteering various suggestions.)

Teacher: We listed several questions about the sun: we want to know the beginning of the sun, we want to know a little bit about the stars, the planets—you want to know a little about how the stars were born, a little bit about what causes night and day, whether the planets also have night and day like we have. We also decided there are different ways of getting this information. Bojo and his father are going to try to plan something together which will explain to us what orbits are, probably the beginnings of the earth. David's father can give us information. We can visit the observatory.

Space travel fantasy?

More materials.

We can look into the encyclopedias. We have movies and we have filmstrips concerning it. Our teachers have gotten books about the universe from the library. Rocky and I got more books this morning, too. This means that probably—one of our teachers does have a movie planned for us which tells us about night and day. Maybe the question we asked, "Is there night and day on other planets?" will be answered in that movie. . . .

Should the children have participated more in the summary?

The Teacher Helps the Learner Interpret His Experiences³

Introduction. Much of the clamor for better education in the United States includes the old objective that children should learn "how to think." Newspaper writers and public orators are not always clear about what is involved in the phrase. Since they hear it so often, children should probably have some ideas about "learning how to think." Here are two records to show that third graders, for example, often begin at a so-called "immature" level but can move from simple descriptions of an abstract term to considerable understanding of a very difficult idea—one that still baffles psychologists and teachers. These records do not show learning in action so much as illustrate gains in understanding of a difficult idea, even in three weeks' time. Do the children learn from one another?

First Discussion

Teacher: What happens when someone says to you, "Think, use your head," or something like that?

Tom: You just think about what you are going to do.

Phil: You imagine.

Craig: Just think real hard.

Dick: Shut your eyes and picture it.

Ricky: You dream.

Janie: Think what they want.

Comments on Procedures

First attempts to describe reveal incomplete concepts.

³ These are records of group discussion in two third-grade classes, one taught by Mrs. Harline Kruger and one by Miss Robin Briscoe, in the Lake Merced School in San Francisco. The first is a beginning discussion, the second about three weeks later. The teachers worked on their problem together. The children in the two groups are equivalent in ability and have approximately the same experiences so that the two records are roughly comparable.

See Chapter Five.

Liza: Picture it in your head.

Judy: Picture it in your mind.

Marcia: Close your eyes and the first thing you know, it comes to your mind.

Teacher: What happens when you don't understand something and someone has asked you to think?

Mea: I see a big red question mark.

Judy: I think of a big train coming in and I hear a train noise.

John: I think of a big book with a question mark on the cover and all the pages have question marks all over them.

Tom: I see a picture with the words painted on it saying, "I don't understand."

Marcia: I think of something all black.

Lyn: I think of a workbook with lots of lines to fill in.

Phil: I picture my desk just stacked with math work.

Mary: I feel a funny picture of think, think, think, floating around in space behind my eyes.

Sandy: All I think of is stars and black all around them.

Bill: When someone says "think" and I don't understand, it's bound to be about spelling.

Helen: I think of multiplication.

Teacher: What comes to you when someone says, "Does this work?"

Lyn: I see myself doing my workbook and the lines are sticking straight out.

Phil: I see a bunch of arithmetic papers.

Mea: I see two stick figures and they are a mom and child. A big closet is there and the mom wants to know what's in it and when she opens it a lot of junk falls out all over her head.

John: I picture a whole room full of arithmetic papers and a whole room full of arithmetic books.

Tom: I think of an icebox and when the mother opens it a lot of stuff falls out and she yells for someone to clean it up. I don't do it though. My little brother does.

Young children may have vivid imagery as one basis for their learning.

The teacher accepts many different responses—not just one "right" answer.

(There's always school work!)

The teacher shows planning in her sequence of questions.

Sharyn: I see flashes of A B C's.

Jack: I just get dots of black and white in my head.

Dick: I think of you giving me lots of arithmetic and you know I can't do them, but I do it.

Mea: I think of having to read orally when I don't enjoy it.

Three Weeks Later

Teacher: What is the mind?

Marcia: The mind is a little thing that works in your head. When you have a problem the mind goes to work and helps you answer it.

Sharyn: Why don't you get an answer to everything then?

Jenny: I think that it's because your mind is like an automatic typewriter with push-buttons and even though you know the button to push, sometimes the electricity goes off.

Janie: No, I don't think you have it right. It's more like a switchboard and you say to your mind "subject please" and you can't get the answer because the line you want is busy.

Bill: Maybe that's why thinking doesn't come when you want it to.

Mary: Yes, but sometimes it comes and you don't want it to come.

Phil: Especially, it comes when it's something bad and you can't sleep.

Tom: But I think that it comes when it's going to be something good, too, like going to a party or taking a trip. You get all excited and your mind won't let you think of anything else, even though you have to or want to.

Ricky: From science, it looks like cotton. It sucks up all sorts of stuff and you squeeze a little here and some there and that's how you get thinking. I saw it on a TV program.

Helen: We have been talking about it like it's a machine but I don't think it's like that at all. If you want to think you have to remember. It works like this. Your mind is like a tablet. You have things written down and you read it off in your head when you need to remember.

Again, a variety of images and relationships.

(Some adults would not state it better!)

Still imagery, but more detail.

One child adds the idea of emotional factors in thinking.

More fluency of ideas with most of the children responding.

(Some dangers in analogy?)

The factor of memory is introduced—another indication of growth of concept of thinking.

Phil: Yes, but that isn't all either, because things happen that never happened before.

Ray: That's right. How can you remember if there is nothing to remember? There's more to thinking than just remembering.

Craig: I guess we better just say that your mind is a little world of its own.

Tom: Yes, we had better just say that thinking depends on your mind and your mind depends on what you know, how you feel and everything else.

At least a partial attempt at a fairly "mature" conclusion.

The Teacher Responds to Evidences about Learning⁴

Introduction. The kind of learning that takes place depends upon the whole setting in which it occurs. The following unedited report of a student planning to be a teacher may be studied from two angles (a) the kinds of learning most likely to appear in the two different classroom settings and (b) the learnings of the young observer herself. What is the role of orderliness and quiet in the classroom? What has the observer learned?

Discussion

I visited on succeeding days two different sixth grade classes that I should like to compare:

Teacher No. 1 invited me into her room amid a general hubbub (the bell had not rung, however). Several boys grabbed at me and begged me to come to see their snake. With false enthusiasm I went to see their new specimen. It wasn't very big—only about one foot long, and it was securely enclosed in a glass terrarium. There was also a frog in the terrarium and two large dead beetles. A number of children and the teacher were discussing the reason for the beetles' death. They all seemed most concerned.

Teacher No. 1 restored order to make out the lunch report. The teacher had told the children to study their spelling words or to

Comments on Procedures

Learning may occur more easily when one's interest and concern are involved.

Is this a waste of teacher's (and pupils') energies?

⁴ Written by a young observer in the preservice courses at Emory University, Atlanta.

See Chapter Six.

read a library book while she worked on the report. Some studied. Some talked. She occasionally quieted them.

After a salute to the flag, Teacher No. 1 said, "The questions that you answered yesterday about our study of Egypt show me that you need help in learning how to express your thoughts in clear, simple words. I'm going to hand your papers back. We'll talk about them and then try to answer again. Most of you know the answers but can't seem to write them clearly and in simple words."

Teacher: The first question is, "Why are there annual floods on the Nile?" (Hands were raised all over the room.)

T.: Mary, let's see how you can answer. Don't read from your paper.

Mary: Well, they have rains and water in Ethiopia, and it goes down to the Blue Nile, and it goes down and spreads out and makes a flood.

T.: I see you know what makes the flood, but let's see if you can think of a clear, simple sentence for your answer.

M.: The Blue Nile . . .

T.: Let's forget about the Blue Nile and think just about the flood and its cause.

M.: There is heavy rainfall in the mountains of Ethiopia that flows down and causes the Nile to overflow each year. (She didn't get this all at once, but with a little help from the teacher and other students. They then all agreed that this was a clear, simple answer.)

They went through all the questions the same way. The teacher explained to one girl whose answer was very muddled that everybody needed help on this. Almost all of the children took part in the discussion.

When I went into the second classroom it was very quiet. Teacher No. 2 introduced me to the children and told them why I was there. (She was the first one I had visited who did this.)

On the board she had written: "Make 5 questions and answer them about each of these

What device is the teacher using in this combination of content and practice? Do such devices aid learning?

The group works on a problem.

Most people don't learn well if their status is threatened.

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countries—Great Britain, Ireland, France, Belgium, The Netherlands, and Luxemburg." (One boy later corrected her spelling of this last one.) Most were working at this exercise. They were quiet, but not very enthusiastic.

Teacher No. 2 was working on the lunch report which went off very smoothly. During the hour that they had for their work three children raised their hands. She acknowledged them, and they went to her desk where she answered their questions.

After the time was up she told them that she would use their questions to make up their social studies test on Friday. They were to bring in their papers tomorrow and the questions would be discussed. This seemed to be the first knowledge they had of why they were writing and answering a long list of questions.

If I had been one of the students in Room 1, I think I'd have been full of interest and enthusiasm, as they seemed to be. The teacher may have let them get a little unruly in talking and running about, but there was general interest and participation.

The children in Room 2 may not have been as bored as I imagined. They were all working and the teacher was pleasant to them. Not once while I was there did she have to ask them to get quiet or to go to work. They also had a terrarium, but no one offered to tell me about it. I don't know whether this was because they weren't interested or because they were afraid to create a disturbance. Teacher No. 2 had the most perfect order that I saw. They may do more interesting and worthwhile things at other times.

Suggest some advantages and disadvantages in this type of assignment.

Most people would approve the use of some individual help when possible.

Does the observer realize anything of the place or purpose in learning?

The observer raises some questions about the place of group enthusiasm and activity.

Typical Concepts

Introduction. Running as threads through the succeeding chapters, the reader will find a number of concepts about learning. Many of these will not be new to the experienced teacher and some will sound like the maxims or even the "laws" of certain treatises on learning. Most of them, however, will have an immediate, practical application

to the work of the teacher. Because the concepts are necessarily scattered over several chapters and are nowhere indicated by type changes or other pointers, a few examples from various chapters are listed here.⁵ These are not intended to "give the show away" but to indicate to the reader the sort of thing he may find in succeeding chapters.

The Learner

In general the learner is viewed as a worthy, capable person who ". . . given a chance, tends to develop his particular human potentialities. The real self, that central inner force, common to all human beings and yet unique to each, is the deep source of growth." "Failure to learn in school is often a child's attempt to defend himself from domination or infringement by people around him," and "energy that might be used in learning gets swallowed up in coping with anxiety." Resistance to learning is often interpreted as laziness. An essential task of the teacher is the opening of channels of communication between teacher and student and between students, and the success of a teacher in accomplishing this depends upon his success in achieving empathy.

Learning

But what is "learning?" What is it that will allow this student, or human being to develop or "grow, substantially undiverted, toward self-realization?" One author suggests that the student cannot become educated unless he identifies similarities and relationships between his personal experiences and the experiences of other persons, past and present. Furthermore, "no person is truly educated unless he grasps some of the interrelatedness of subject matter." A suggestion about "learning" is embodied in another author's admonition to teachers: "Students should be involved at all levels where cooperative effort will culminate in *meaningful*, desirable results." This idea is stated forthrightly by one author who says simply "Learning is the search for meaning." Earlier, in different terms, the same author states that "the teacher helps children to develop more accurate interpretations of their experiences."

"Reinforcement" receives some attention in a few chapters, which suggest that there is such a factor affecting learning, and that it affects both conscious and unconscious processes. For example, both con-

⁵ This analysis of concepts presented in the yearbook was prepared by John Ginther, professor of education, Emory University, Georgia. The quotations are from first drafts of manuscripts.

scious and unconscious levels are implied in the statement that "behavior represents the learner's attempt to maintain himself as a person in relation to the pressures and opportunities in his environment." These learnings which enable the learner to "maintain himself" are thus strongly reinforced. Another way of indicating what is meant by "maintaining himself" is expressed by the same author when he says, "learners pay attention to and work on their individual developmental tasks as they see them." The power of reinforcement is suggested by the statement that "much of what students learn from the teacher does not really become accepted as a part of their experience until it is supported and reinforced by other students."

It is the almost unanimous opinion of the writers that learning is unique for the individual. From the early statement that children differ in the way they approach the same learning task to the place it is stated that "children do not need uniform experiences to attain the same eventual goals and/or results," the chapters stress the role of the individual student in learning. For example, one author points out that "since the learner has his own rather than the teacher's experience, any interpretation of the teacher's experience is likely to be inadequate to insure learning." Another dramatizes the concept "uniqueness" by stating that "different interpretations of the same learning experience may lead to undesirable as well as desirable learnings or outcomes."

The Teacher's Role

Lest the teacher's task implied in these chapters seem overwhelming, the authors point out a variety of most useful "things to do." "Stress should be laid on participation in actual situations. If children take part in such experiences, rather than merely observe them, learning is bound to improve."

Diagnostic insights are needed since "teachers should be able to identify sequential steps in skill-building, succeeding levels of complexity or abstraction, or confusion in learning as they occur in their classrooms." And consider the implications of the statement that "one of the most valuable tools for learning is a knowledge of the methods and pitfalls of logical thinking." Not only would the authors have teachers involve children in logical thinking about problems significant to the learner, but they would require all to demonstrate this skill. This may be a reasonable demand in view of the school's responsibility to society for the intellectual development of its members.

The content to be learned is not a fixed body of static knowledge to be organized and taught as a group of school subjects, but rather is a living, growing thing continually modified, not just added to, by the advances of each generation. The school is the critic and the interpreter of the social heritage. The school must continuously reselect, reinterpret, and reorganize the content which is essential to the needs of society, which it serves.

Thus the teacher needs skills in logical thinking to select, interpret and organize the content of learning.

One of the authors presents a thought-provoking list of nine ideas of the teacher's role. Another author analyzes the teacher's varied approaches to the motivation of students. He also points out that "if students know clearly what the learning goal is, they are more likely to reach it than if they are kept ignorant of the goal." From another point of view the teacher's burden is somewhat reduced if he understands that "much of what students learn, they learn from each other."

Another characteristic of a good teacher is suggested in the following statement, made about learners in general: "The person who is emotionally insecure, self-centered, or so preoccupied with his own problems that he cannot permit himself to become involved is unable to learn." In addition to competency in the technical aspects of selecting content and planning sequence, the teacher needs psychological insights into the personal nature of learning.

Conclusion

If teaching is to be a genuine and advancing profession, it must be bulwarked by excellent training, broad and planned in-service experiences, and a program of active research on learning and related problems. These three forces center and culminate in the individual teacher—in Mrs. Brown teaching the use of the dictionary in fourth grade or in Mr. Smith exploring genetics with his tenth grade biology class. During their preliminary training Mrs. Brown and Mr. Smith became acquainted with some of the research related to teaching and began their actual experience in teaching. Valuable as this preliminary preparation was, it must be supplemented by continued growth in understandings and skills, sometimes in study of the substantive fields, sometimes in the knowledge of children or youth and of the learning process.

The year 1958 in which this yearbook was written was marked by an increased national concern for education. It would be unfortunate if this anxiety and reappraisal were translated only into educational

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competition with the Soviet Union or into crash programs in mathematics and science. The desire for the better education of young Americans means more schools, more financial support, better curricula, more substantial undergirding of all parts of the educational system. Part of such support, probably the most important part, comes in improved teaching, better materials of instruction, a more efficient functioning of the learning process. Improved understanding and use of the process is the aim of this yearbook.

Also in 1958, popular demands and serious study within the teaching profession itself produced a greater emphasis upon the intellectual goals of education. Problems in cognitive learning and the strengthening of the student's mental capabilities were stressed more than problems in personality development, social relations in the classroom and the acquisition of attitudes and values. The writers of this yearbook do not accept a dichotomy between "intellectual" versus "social-emotional" development nor can they endorse "subject matter" over "life adjustment" or "fundamentals" over "fads and frills" as usually set up for straw-men by certain writers and speakers. Running through the chapters of this yearbook, however, is a serious concern for cognitive learning described in such terms as concept formation, verbal and symbolic processes and problem solving and creativity. These are problems of the most complex types of learning. The yearbook does not give final answers to such difficult questions but its authors grapple with some of these in succeeding chapters.

CHAPTER TWO

The Learner

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KNOWLEDGE about human development provides an important basis for the teacher's planning at each step of the learning process. During the past thirty years, interest in learning has stimulated many research studies by teachers and others—Involving thousands of children and adolescents throughout the country. A wealth of information has been gathered regarding the characteristics of children at various ages, their interests, their problems, and typical adjustments to these problems. Much has been learned about physical development from conception through the periods of childhood and adolescence to maturity. The effects of wider cultural influences upon personal and social adjustment have been analyzed through careful studies of children from different social classes, racial and ethnic groups.

From these studies have emerged several principles of growth and development which are of value to the teacher as a working guide in all phases of instruction. These generalizations, derived from research in several of the social sciences, are of major significance to teachers in planning favorable conditions for learning.

The following pages summarize briefly some of the common agreements about development and learning which assist teachers in their understanding of and planning for individuals and classroom groups. Appendix B presents a selection of the references from which these principles are drawn.

In any kind of learning, teachers note differences among children.

A typical classroom, for example, will have a few children who enter into the activity with reluctance, many passively, and several with deep absorption.

The fourth grade was ready for recess—indeed some of the children had been ready for several minutes, long before reading time was over. But there was Mary still poring over her book.

Many of Miss Walton's eighth grade children are uneasy about arithmetic. But Richard attacks problems with zest and enthusiasm, often asking for harder ones. He is always discovering quantitative ideas and ways of using numbers in and out of school.

Many girls and boys leave the science laboratory promptly. But there are always several who linger to talk with the instructor. Often these are the same ones who return later to finish the experiment begun in class.

What accounts for these differences in the way learners approach the same learning task in the same classroom and with the same teacher?

The first and most obvious explanation is to point to differences in mental ability. Wide differences in mental capacities have been steadily revealed since the earliest work in intelligence testing. Variations in children's learning to read, to spell or to calculate are to be expected in the light of known differences in mental capacity or intelligence.

A complete answer, however, is not so easy. One research concludes that scholastic performance of a group of girls in college was 25 percent determined by ability and 75 percent by other than intellectual factors.¹ Other studies of children's learning reveal correlations between tested IQ and scholastic achievement which range from .40 to .50. This means that two or three out of ten children actually function as might be expected of their tested intelligence while seven or eight do not. The evidence is accumulating that aside from mental retardation, the IQ has less to do with learning achievement than was formerly believed.

What are these influences, other than academic intelligence, which so powerfully affect school achievement? Some of these are highly individual and are related to the personal characteristics or unique experiences of each learner. Others are social or cultural in nature reflecting the pressures and strengths of the environment in which the individual grows up, interacts and learns.

¹ Jean W. MacFarlane. "Intellectual Functioning in High School Girls." *Journal of National Association of Women Deans and Counselors* 21:3-8; October 1957.

Personality and Life Experiences Influence School Achievement

Age places some limits on children's learning and indicates probable interests. For example, we can predict with certainty that many five year olds will have difficulty in learning to read. Most of them, however, can be counted upon to show interest in pets and other animals. Most adolescents throw themselves eagerly into activities which permit social interaction. Curriculum planners keep in mind the interests characteristic of different ages in suggesting the sequence of educational activities.

Sex frequently gives a specific direction to learning. Most boys like to make things and many have enthusiasm for arithmetic and science. Often girls show less interest in these activities than do boys but learn social and verbal skills more easily. Adolescent boys are eager to improve their physical strength and skills while girls of the same period are intensely interested in personal appearance. Their own characteristics, as well as conditioning by the culture, influence the preferences of boys and girls for different kinds of learning. Teachers meet this diversity by suggesting different approaches to and applications of the same learning.

The development of interests is closely related to the learner's success in school. Some children early in life develop extremely intense interests in such topics as boats, horses, rocks or stamps. When these interests are related to school activities or when the teacher can bring them into the child's school learnings, his effort and success are intensified. Sometimes, however, these strong interests are not uncovered or are so remote from school concerns that the teacher cannot make use of them. One boy's interest in raising pigeons or another's interest in "ham" radio may seem hopelessly distant from all that is learned in school. In these instances children and adolescents may be reluctant learners in school although they are completely absorbed in their learning outside of school. The skillful teacher is sometimes able to use these personal concerns of children to open up new interests more closely related to school learning. The learner's success in school achievement is influenced by the extent to which his interests reinforce or interfere with the teacher's efforts.

Patterns of physical growth affect school learning. The human organism utilizes available energy in two ways, for physical growth and for adjustment and learning. During periods of rapid physical

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growth which make heavy demands upon energy the child's or adolescent's learning may suffer. He may seem listless, indifferent or uninterested in school. After such a growth spurt new capacities emerge which act to accelerate learning.

Some children and young people have specific talents or disabilities which while not directly related to intelligence count in success in school. Muscular coordination for instance is not highly correlated with mental capacity. It is often a powerful factor, however, in determining success in such skills as writing or reading. Since so much of school learning is verbal and linguistic, the child or young person with keen visual acuity or auditory perceptiveness has an advantage not directly related to his ability.

The child's emotional organization influences his school achievement and success in several ways. From the beginning children evidence differences in psychosocial development or "personality." Some infants are active with high sensitivity both to such internal stimuli as hunger and to external conditions of discomfort. Other infants seem to exhibit a more even physiological rhythm and less irritability to internal and external stimuli. Inherent characteristics and the resulting attitudes of other people to these characteristics influence each child's psychosocial development. Each begins to develop a distinctive pattern of emotional responses to the environment as he perceives its frustrations and satisfactions.

Children who have had generally close emotional ties with parents are disposed to like and accept other adults. This tendency on the part of children to identify emotionally with adults is extended to teachers. The child then is also ready to accept the tasks which the teacher presents and is sensitive to the teacher's values. Because such a child is willing to work for the teacher's approval, he is more open to school learning. He accepts the school's learning tasks and more willingly works and learns. Through the years he accumulates backgrounds of understanding and work-skills which give him an advantage in each new learning situation.

Some children quite soon seem to possess an unusually strong emotional urge to mastery over their environment. The young child who shows determined persistence in digging, in climbing, in putting things together until satisfied with success often brings these same qualities to school. He sees a school task, too, as a challenge in which obstacles must be overcome. As he builds up a bank account of successes, he continues to attack each new task with zest. Often this learner does not require recognition or approval from others to keep

on trying. Completion of the task is the satisfaction for which he strives. Achievement in itself is his motive for learning.

Other children seem to bring the same energy to resisting learning tasks. Insecure because of the many pressures upon them, they have often learned to think of all demands as a threat or a personal invasion. Failure to learn in school is often a child's attempt to defend himself from domination or infringement by people around him. Although unusually intelligent, Jimmy avoided reading and never learned to read well. This seemed to be one way he could defeat his overdirective and demanding parents. During adolescence many boys and girls express their need for winning independence from adults by scoffing at school learning or rejecting the teachers' efforts.

Sometimes children are so preoccupied by emotional problems that they are not free to learn. For example, Linda's teacher was at a loss to explain the girl's slowness and confusion. Later Mrs. Mathews discovered that worry about her parents' quarreling and divorce had prevented Linda from being aware of what went on in the classroom. At every age learners may be distracted from a task by worries about home conditions, peer relationships, or their own abilities.

Aside from characteristics of the child's own personality his success is also affected by the quality of his relations with others. The feelings of other people toward the child or how he thinks they feel about him influence his enthusiasm or reluctance toward learning. The ways in which the child interprets his relationships with others build persisting attitudes which color his responses to learning in school. The sense of longing due to unsatisfied needs for affection and recognition may be expressed in behavior which causes him to differ markedly from other children. What the teacher sees as behavior so unusual that it is termed a "problem" is often the child's reaction to his feeling that others ignore, disapprove of, or even reject him.

The child who "shows off" or who cries often may be attempting to meet his unsatisfied needs for closer relations with other people.

Sometimes these problems may energize the child and create strong incentives. In this way, they may reinforce his learning at school. Other times, these problems may so preoccupy children's attention and energies that they interfere with learning. For example, the child who craves recognition from others may throw himself into school learnings as a substitute for the affection he has missed, or as a way of gaining the approval he seeks. Or he may spend all his energies in attracting attention from others and be unaware of the tasks and goals of the classroom.

In these many ways, personal characteristics other than intelligence affect how a child perceives the learning task. His interests, his drive to achievement, his willingness to accept adult demands, and his special talents or lack of them all lead him to see learning as an opportunity or as a threat. These characteristics determine how and to what extent his intelligence will function in school learning. As much as his intelligence, these characteristics are responsible for the success or lack of success he encounters in school learning. The adjustments which he has made to his own needs and to the demands of growing up may free him or may limit and interfere with his learning in school.

Children want to learn and indeed are always learning. Whether they successfully learn what the school presents to them, however, depends in part upon what the child is like as a person and what he believes himself to be like. Through the learning activities which they select and through their relations with each learner, teachers have a powerful impact on the child's concept of himself as a learner.

Teachers are becoming increasingly sensitive to the influences other than intelligence which condition children's school achievement. With greater awareness of these factors, teachers can reduce the amount of failure and dissatisfaction which children face in school and can insure that more children will freely develop and use their intellectual powers.

Culture and Social Environment Influence School Achievement

The social class into which a child is born influences his learning. The middle class core culture, the socially elite, and the manual workers usually generate different aspirations in their children, different interests and consequently different approaches to learning. The majority of students who attend a university come from middle and upper class homes. This is not because these young people are the only ones who have ability or could succeed in college but because they are expected by their families and friends to attend. Youngsters from lower class homes may not be lacking in ability; frequently, however, they may be uninterested in academic knowledge. Lower class people usually place priority on more tangible and immediate rewards than are found in higher education. Many satisfactions must be long delayed by those who decide upon a college education. The values held by people of the various social classes

give us insight into differences in learning by children of similar abilities but from different social groups.

The ethnic or the national background of a child has an effect on the way he learns. Children from varied ethnic or national backgrounds are not different from other children in their abilities and talents. The social expectations of certain groups, however, and the limitations set upon them by the majority culture make a difference in the ways children attack school learning. For example, a Negro boy or one of Mexican descent may be hesitant to enter the field of aeronautics in spite of his ability, because he may believe the opportunities in that field are limited to people of other backgrounds.

Such feelings and beliefs may give definite direction to the kinds of things a youngster wants to learn and those he turns away from in the classroom. Various national groups in different parts of the country have selected and succeeded in certain occupations. Consequently children from such groups are encouraged by the patterns they see around them and they may aspire to the same occupations and are often encouraged to do so by families and friends. Their school learning may be strongly motivated in specific directions because of occupations chosen by other members of their groups. For example, many Portuguese have turned to farming, many Chinese are merchants or scientists and so on. Children from such groups have a special set of experiences which create an eagerness for certain kinds of learning.

The place where a child lives, his neighborhood, the occupations and kinds of people who surround him make a difference in the way he learns. Whether a child lives in the country or the city, whether his father is a policeman or a pilot, whether his playmates and the parents of his playmates are interested in achievement and learning make a difference. Every child learns what he lives and he is motivated only to learn more about those things which he knows or imagines.

Family values affect learning. A boy or girl who grows up in the midst of good literature, classical music, and interest in new scientific and technical discoveries is usually moved to learn different things from the child who is surrounded by such influences as pulp magazines and "rock and roll."

A child's family influences his selection of what he wants to learn in subtle as well as overt ways. Sometimes a child rejects the family values as did the son of a college professor of engineering who be-

came a ballet dancer or the son of semi-literate parents who succeeded in becoming a physician. More often, however, a family capable of academic learning begets a son or daughter interested in academic success, while noneducated parents sometimes may foster in their children a regard for more practical occupations or even a contempt for school learning.

The kind of life which each family leads affects a child's learning. A child whose family has traveled a great deal may have more interest in geography and history than those children who have stayed at home. A summer at the beach or the mountains, a fishing trip, a visit to a science display, or learning to work an electronic computer may give a certain perspective or emphasis to special kinds of learning.

Each child brings all his background to school. He learns in relation to this complexity of personal attributes and experiences. He learns only a fraction of what is taught as he selects those things that make sense to him because of his particular background and special interests and turns away from those that do not.

How the Teacher Plans To Help Each Pupil Learn

In the first place the teacher must accept the fact that learning is individualized and as unique as every child. In a group of 30 children there will be 30 different ways of learning. And these differences increase with maturity and experience. The teacher, therefore, must try to know each learner as a person. This means utilizing a variety of guidance techniques for gaining information. The teacher must use all the available records about the child's development and history. The teacher must know the parents well so that the backgrounds of the children may be understood and discussed with them. Autobiographies and case studies, careful observation of children's behavior, and study of their products help the teacher discover the particular abilities, needs and potentialities of each child.

The teacher also must strive to attain broad professional knowledge regarding human development, and the cultural influences upon personality. Such factors enable teachers to understand themselves as persons and to assimilate problems of their own childhood and adolescence. Only with such insights into self can teachers fulfill the role of enabling each learner to realize his full potential. The teacher's knowledge about the sex and age norms for growth and learning, and familiarity with the values and characteristics of social groups are essential. All these insights must be brought to bear upon the problems of studying the learner and planning for and with him.

In spite of the wide diversity among learners, the teacher however must plan for groups. The professional teacher uses the life experiences, the knowledge and interests of as many children as possible as take-off points for learning activities.

Remembering that one child will learn by one path and that the next child will take another, the teacher uses many avenues to learning. Oral and written reports, research projects, graphs, charts and many other sources are used to convey the same ideas to different children. Teaching is reinforced by several different approaches and varied illustrations since one approach will have meaning only to some children. A lecture may be intelligible to one child, a motion picture on the same topic will reinforce the learning for another child.

Realizing the impact of emotions on learning, the teacher will not be afraid of showing enthusiasm for a task, affection for children, concern for failure. Children's positive attitudes toward the teacher are an impetus to learning. Children are encouraged to recognize and understand the feelings which accompany learning.

A single standard for judging learning is avoided as unreal in light of the unique backgrounds of children. Educators have long struggled with the problem of the evaluation of learning and the reporting of teacher judgments to parents. The many negative effects of competitive judgments on children's motivation have been a serious concern to many teachers. Most teachers now agree that cooperative analysis by teacher and child results in greater understanding of the learning task and greater learning progress on the child's part than did older methods of grading.

The quality of children's learning as well as the quantity and the speed of learning must be evaluated. This means that each child will have an opportunity to show how the knowledge and skills which have been learned fit into his life. Tasks requiring only correct answers and speed often neglect depth of understanding and actually prevent the individual's comprehension of the significance of what he has "learned."

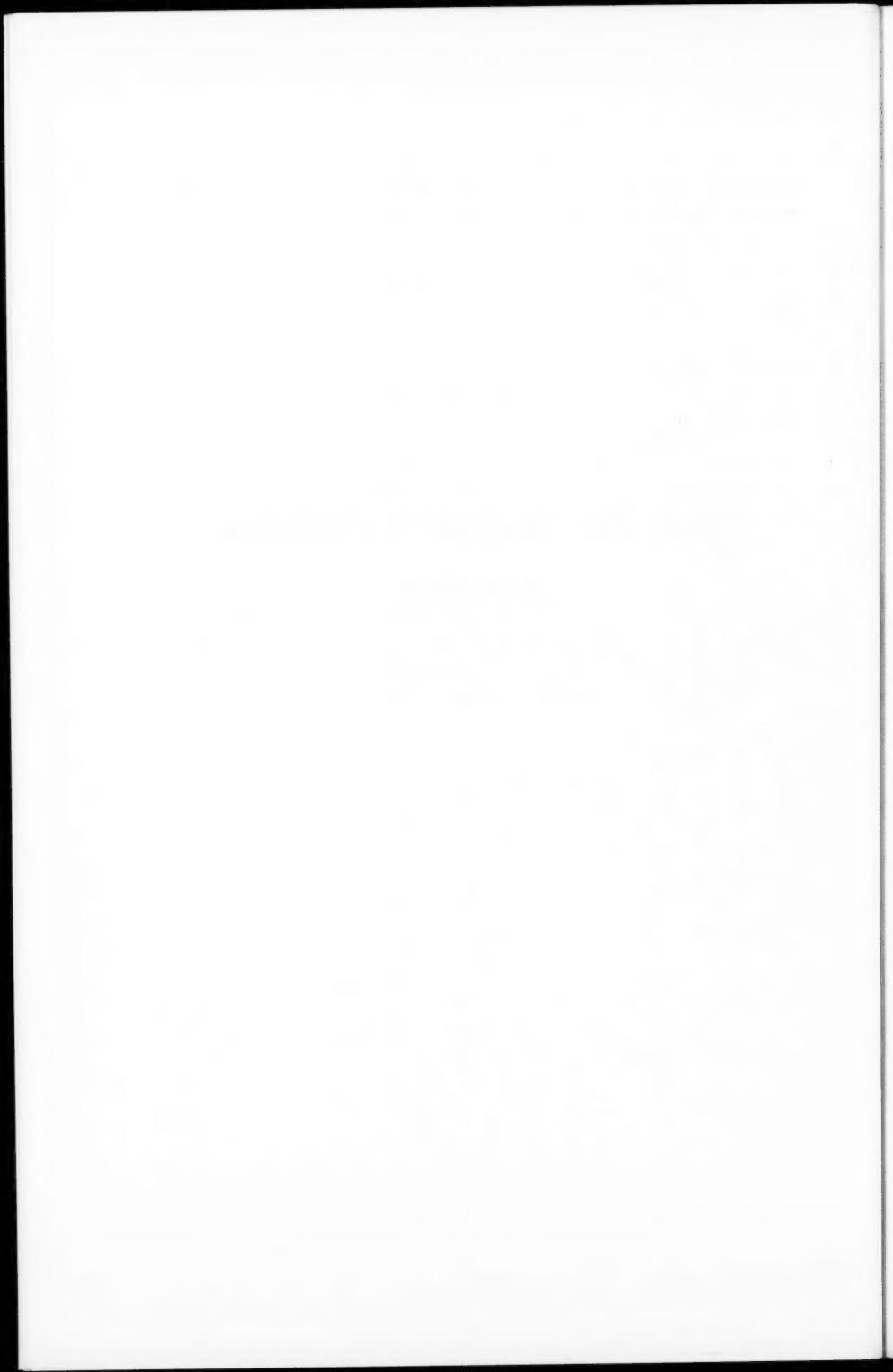
Learning, then, is a unique and individual matter and many personal and social factors make it so. Every elementary teacher is confronted with 25 or 30 unique learners, while the secondary teacher faces even larger groups. Teachers at both levels must come to some practical terms with this diversity. The teacher must not operate as though the group were homogeneous or as though the learners could and should be poured into a mold. And yet youth must emerge from school with a common core of knowledge and skills. All people in our

culture must know how to read, to write and to handle number skills. Nearly everyone must know how to drive a car and to run a typewriter. Most people must know more and more about mathematics, science, the traditions of our culture and the geography and history of our nation if only to understand the news. More knowledge and deeper insights are required for effective citizenship and intelligent living in today's world. The common core of essential understandings and skills is on the increase in extent and complexity.

The professionally minded teacher recognizes that this common core of knowledge and skills cannot be taught effectively by a single method. The central problem of teaching is how to guarantee basic knowledge and skills to all children and yet to preserve the individuality and develop the creativity of each one; how to bridge the gap from the unique world of each child to the understandings and skills essential to his participation in the life around him. Social and economic progress has always resulted from the creative solving of problems. Such progress has been slowed by man's excessive conformity to norms and his frequent reliance for the solution of problems on only those facts and skills that can be memorized. The guidance of learning is not solved alone by pressure, formulas, or so-called "high standards." The humanness of each child is the heart of the teaching problem and at the same time the key to its solution.

Part II

***How the Teacher Facilitates
Learning***



CHAPTER THREE

The Teacher Selects, Plans, Organizes

John I. Goodlad

THE RIGHT decision at the right moment is the essence of good teaching. Right decisions are those that time learning perfectly for the individual student. A series of such decisions moves the student forward at an optimum pace. Obviously, such timing and pacing are no more accidental than is a perfect catch by the professional outfielder. They are the result of careful planning and organizing on the part of the teacher.

The teacher must have a reasonably clear picture of what the learner will know or do when he has accomplished certain learning. Otherwise, how can the teacher know if anything worthwhile is resulting from the teaching-learning effort? He must see to it that what the student seeks to know builds readily on what he already knows. He must decide when to begin an activity and when to bring it to a close; when to use a student interest and when to pass it by; when to insist on exactness and when to sacrifice exactness to feeling. All these things and more the teacher must take into account in timing and pacing students' learning.

Some components of the learning-teaching act are quite predictable. The teacher can select the book to read, the problem to study or the skill to master. He can anticipate who will grasp new ideas quickly and who will grapple with them in a cumbersome fashion. The experienced teacher can even predict the kinds of difficulties the class will encounter and who in the group will express greatest frustration. These things are the environmental conditions in

teaching; they exist. They can be consciously encompassed within the teacher's "span of control," if the teacher chooses to do so. Or, these factors can be ignored, left to operate quite by chance.

But the learning-teaching act is profoundly affected by powerful forces that cannot initially be brought within an operational span of control. Teachers and learners alike are "carriers" of pressures, prejudices, optimism, pessimism and other attitudes which may aid or retard learning. The teacher plans carefully by bringing into synthesis those conditions that are known to him. And then, variable winds loaded with radioactive materials blow in upon the scene contaminating all that they touch. The best-laid plans are distorted or obliterated. Nonetheless, to the extent that the teacher carefully accounts for all that is relatively stable, to that extent variables are likely only to modify rather than destroy what has been planned.

The job of the teacher is to set up a series of catch-hold points—organizing centers for learning—that will initiate certain desired reactions on the part of students. It is impossible (and undesirable even if it were possible) to prescribe the series of such organizing centers to be set up for any group. It is possible only to analyze what is involved in the planning-organizing process. Consequently, this chapter proceeds through the following phases:

1. An analysis of the factors (environmental conditions) that the professional teacher should take into account in planning the learning-teaching act
2. An analysis of certain variables that must be screened out or used constructively if initial plans are to be successfully modified in action
3. A presentation of criteria to be applied in actually setting up the stimuli from which learners are to derive their educational experiences.

An Episode in Planning

The following episode involving a teacher and a supervisor illustrates, in part, key points in the preceding introduction. The left-hand column records the discussion just as it proceeded. The right-hand column provides a running analysis to reveal: (a) some of the factors that can and should be encompassed within the teacher's span of control; (b) some of the variables that intrude and that can impede or aid learning and teaching; and (c) some of the considerations that should enter into the selection of situations in which students are to learn.

*Episode**Analysis**Scene 1*

Teacher: I wish you would help me with social studies; it's the poorest time of the day. I don't know what the trouble is.

Supervisor: Well, why don't we begin there.

T.: Well, as you know, the social studies framework lists "The Community" for the second grade.

S.: And are you doing "The Community"?

T.: Oh, I'm doing "The Community," all right. I began with the Police Department; next we did the Post Office; now we're up to the dairy and the grocery store.

S.: Have the children responded?

T.: I can't seem to get them interested or to hold their interest. In years before, I felt that I was successful but not with this group. They just don't seem interested in anything.

S.: Have you tried other things?

T.: It wouldn't do any good; all they want to do is look out of the window at the steam shovel. We're having a new addition, you know.

S.: Maybe we could build a unit around that.

T.: Oh, I wouldn't know enough. I don't know a thing about machinery, and besides I'd feel guilty.

S.: About what?

T.: About not doing the dairy and

Specific content to be taught determined in advance of the actual situation in which the teacher finds herself.

The process of learning being promoted seems to imply a rather static concept of learning: we "cover" things; we "did" the Post Office.

Recognition on the part of the teacher that she must have interest and attention from the group if the children are to derive any learning. Absence of interest and attention in this group is noted by the teacher.

The teacher displays a certain personal futility. She notes the intrusion of a factor not planned for that currently is working as a deterrent to the learning she visualizes for the group.

The teacher reveals an insight into herself as an informed person. She expresses insecurity over the prospect of proceeding with learning activities not indicated in the course of studies.

the grocery store—they're in the course of studies, you know.

S.: As "musts"?

T.: Yes; or maybe. . . . Well, I don't know for sure.

S.: What have you done in social studies?

T.: Well, when we studied the Police Department, I told them about the work of the police.

S.: Did they see a policeman?

T.: Oh no, we aren't incorporated, you know. We have a deputy sheriff here when we need him.

S.: And the Post Office?

T.: That wasn't successful, either. I didn't take them to our Post Office. It's so little and uninteresting. If we could have gone to the downtown city Post Office, it would have been different. I just had them read the Post Office books instead. But they weren't interested and the books seemed too difficult.

S.: Suppose we think about the steam shovel for a minute. How long has the crew been working?

T.: Only a few days, but it seems like an age. The children could give you a blow by blow account. They know it by heart.

S.: Why don't we ask the foreman if he will talk with us a little about the possibilities of giving the children some real information regarding the work?

* * *

Scene II (Teacher and Supervisor have returned from excavation.)

Teacher reveals a narrow view of the curriculum as topics to be taught because they're included in the course of studies.

Supervisor points to the necessity of direct experience in concept formation.

Sterile viewpoint regarding the learning process is demonstrated again.

Supervisor introduces the possibility of turning a negative influence into a positive one.

Teacher: I never would have realized there was so much to be considered. How can I make the most of it? I know I will have to plan, of course, but what always bothers me is what to have them do later. There are steam shovel stories, I know.

Supervisor: Why not have them write their own story?

T.: The words will be so difficult —motor, excavation, time schedule, night crew. Maybe we could substitute some easier ones.

S.: Let's try using the real ones. You know, we often talk about the value of vivid real life experiences in accelerating children's reading and speaking.

T.: And using the hard words?

S.: Maybe we'll test that, too; which are hard, which are easy? What makes words "hard," anyway? The smallest words—the, and—often seem the hardest for children because they have nothing to hang onto them.

T.: What about the steam shovel stories?

S.: We can always use them later.

T.: What about arithmetic? We're doing two-column addition.

S.: How are you getting along?

T.: Oh, it's the same old story. The fast ones can do it; the slow ones are struggling.

S.: Maybe this steam shovel business will give us an opportunity to

The teacher begins to think about a range of factors that must be taken into account in planning a different kind of setting for learning. The need for initiating plans, for following through, and the need for materials are brought into her thinking.

The supervisor injects the idea of using one initiating point for fulfilling several educational ends.

Again, the supervisor introduces a view of learning that is compatible with research and theory of recent decades.

The supervisor challenges some conventional notions about sequence based on apparent complexity.

The teacher shows an awareness of the need for having learnings in one area relate to learnings in another.

The teacher reveals the familiar difficulty of dealing effectively with individual differences in many areas.

Again the supervisor demonstrates the consistent application of a mod-

put the children's keen interest to work on arithmetic, too.

T.: Like the reading groups?

S.: Why not?

T.: I think I'm beginning to see. Some children could keep daily records while others could add up the hours in the week. This would help all of us; the parents are a little anxious about the children's success in addition.

This conference between supervisor and teacher brings to our attention virtually all of the factors that must be accounted for in planning the learning-teaching act: the content of instruction, the learners themselves, the processes through which effective learning proceeds, and the materials to be used. Reading between the lines, two other factors are seen as significant in teacher planning. The teacher possesses a sense of direction, a view of where he is going with a particular group of learners. In addition, the teacher has a view of himself as a teacher and a person: what he can and cannot do, what he knows and doesn't know, and so forth. Taken together these factors constitute the teacher's span of control.

The conference reveals further that what insight one possesses in each of these categories makes a significant difference to his planning. This teacher's view of direction focused attention on what was to be covered and, as a result, the curriculum was equated with a course of studies. For her the prospect of moving away from prescribed content created guilt feelings of such proportions as to inhibit this teacher in seeking to function as a creative human being. As a result, her insight into the importance of interest and attention was relegated to an academic status. She intellectualized her awareness but did not put it to work.

The episode reveals, too, the influence of factors not initially brought within one's span of control. For example, the steam shovel moved unexpectedly to adjacent ground and noisily announced itself as a threat to both planned activities and the teacher's sanity. To the teacher it was just a nuisance, a disruptive influence. To the supervisor it was an opportunity to make learning real and meaningful. Some such intrusions are, indeed, a very real threat (as, for example, administrative instructions to follow the course of studies) and the teacher must do everything in his power to keep them from

ern view of learning based on evidence.

The teacher begins to relate a number of considerations that must be taken into account in planning. She begins to visualize what the children would be doing. This is quite a step from viewing learnings as topics to be "covered."

contaminating the learning process. But others are pennies from heaven to be used as premium payments on the learning capital.

In the conversation, the supervisor implies certain conditions that characterize the desirable catch-hold point for learning. For example, she points out the significance of finding a stimulus that fulfills several educational objectives simultaneously. The teacher, too, recognizes that very little learning results unless the organizing center challenges learners at several different attainment levels.

The balance of this chapter develops and illustrates the central concepts about planning and organizing that have been introduced so far. Of the six factors already identified as significant in the teacher's span of control, only three are used in developing this concept further: learners, learning processes, and content.

The Teacher's Span of Control

Classroom climate is dependent upon the inter-operation of factors which can be modified. Each teacher must develop a framework for organizing and interpreting data pertinent to the guidance of learning processes. The range of factors that might constitute such a framework already has been indicated. The extent to which these factors are brought into the teacher's decision making constitutes his span of control. Facts, principles and theories regarding the factors included and the composition of a teacher's span of control may not be in close agreement. The teacher may encompass and draw from little more than tradition. But the opportunity to be more scientific is ever present. Happily, then, one's span of control can become more precise and useful through dedicated personal effort.

The teacher's span of control should be comprehensive enough to include all the major factors which are pertinent to teaching. At the same time, however, it must be limited enough so that the entire group of factors may be considered in decision making. The categories must be able to absorb relevant data. And the categories must be flexible so that outdated facts and principles can be eliminated and new findings included. With a sound span of control, the teacher is in considerable command of the *science* of teaching and ready to engage in the *art* of teaching.

Learners in the Teacher's Span of Control

Courses in educational psychology, child development or adolescent psychology are standard in preservice teacher education programs. At the in-service level, thousands of teachers across the land have

participated in various kinds of child study programs. The teaching profession obviously believes that it is important for teachers to understand the learners they teach. But perhaps this is only "soft" pedagogy, a concern motivated by ends other than rigorous learning. Does inclusion of the learner in the teacher's span of control really make any difference to the student's learning? Or, must the teacher's effort to understand learners be written off as humanitarian or "the thing to do"?

There is some evidence to suggest that teacher knowledge of human development in general, and of a specific group in particular affects the learning-teaching process. Ginther,¹ in a comprehensive survey of one large child study program found that the classroom performance of teachers who had participated for three or more years could be differentiated positively from that of teachers who had not participated at all. His study points to the importance of gaining general insight into human development and the characteristics of successive age groups. Sturgis² explored the relationship between teachers' knowledge of the groups they taught and the achievement of these classes. College physics teachers were each given detailed information about one class section and practically no information about parallel class sections. The findings suggest that college students achieve more when their instructors have a great deal of information about them as individuals.

Studies such as these support theories attesting to the importance of rapport between students and their teachers. Energies used in coping with teacher-student conflict are not available to the teacher for teaching or to the student for learning. The effort, then, to plan and organize the classroom around what we know about human beings in general and about these individuals in particular is not peripheral. It is central to the function of schooling and the task of the teacher. Knowledge of learners, then, must be included in the teacher's span of control.

Learning Processes in the Teacher's Span of Control

Nineteen years ago, when the writer began his teaching, he believed that adequacy of learning is the product of general ability, as

¹ John R. Ginther. *An Evaluation of the Atlanta Area Teacher Education Service*. Atlanta, Georgia: Atlanta Area Teacher Education Service, 1955.

² Horace W. Sturgis. "The Relationship of the Student's Background to the Effectiveness of Teaching." Unpublished Ph.D. dissertation. New York University, 1958.

revealed by intelligence quotient, and of motivation for the tasks to be accomplished. From this beginning he went on to equate motivation with time and drill. And so, several spring afternoons each week when the days were lengthening and young adolescents' thoughts were wandering even more than usual, a dozen weary seventh graders and an even wearier young teacher gave extra time to the intricacies of common fractions. The results were far from encouraging. The class drilled on the three types of manipulations involved in the range of percentage problems. But, when ultimately a simple problem was posed, the youngsters invariably asked, "Which type do I use?"

Studies by Haggard³ and others reveal the need for a more comprehensive learning formula than the one once used by the writer. Certainly intelligence and motivation are essential to high level learning, other things being equal. But intelligence must be functional in that it can be put constructively to work. And motivation can be of such order that student activity is reduced to inertia. The individual must have energy for learning over and above the energy needed for coping with personal daily needs. Otherwise, he cannot approach problems creatively, in a way that results in learning increments. Learning, then, is a product of intelligence, motivation, energy and creativity. This is the kind of learning formula that teachers must encompass within their span of control and put to work in planning and organizing the learning-teaching process.

Content in the Teacher's Span of Control

Teachers at all levels of education are predominantly content-centered: they depend heavily on what is to be taught to carry the burden of instruction. This remains true in spite of the concern expressed in recent decades for learners and learning. But one can become a student of learners and of learning without significantly enhancing his ability to teach. Teachers have found that psychological principles must be translated into implications before they are useful. Similarly, one can become a student of history, chemistry or the fine arts without giving enough thought to the relation of his field to teaching.

Content is organized into subjects to preserve knowledge and to expedite the accretion of new knowledge. To serve education, content

³ For a report of several appropriate studies, see Ernest A. Haggard, "Socialization, Personality, and Academic Achievement in Gifted Children," *School Review* 65: 388-414; 1957.

must be organized for instructional purposes. The most significant organization for teaching is that which exists at a given moment in a teacher's mind. The teacher must be both a student of content organized for preservation and an organizer of content for instruction.

Certain aspects of English teaching provide a useful illustration of the teacher's rule in synthesizing content for instruction. For years, our elementary and secondary schools taught what the linguistic scientist calls "referential" grammar. For example, a noun is defined as the name of a person, place or thing and thus refers to something outside of language structure itself. The linguistic scientist insists that "differential" grammar should be taught. That is, a noun should be differentiated from other parts of speech according to the function it performs within the sentence itself. The student then learns the structure of his language rather than a series of definitions which carry him away from how our language is put together. The English teacher whose concept of grammar is of the old-fashioned variety denies his students the view of content they should have. Such a teacher includes content within his span of control but it is misleading content that language specialists do not approve.

Considerations of content do not alone determine planning and teaching. But knowledge has its own integrity, an integrity that must be respected in the face of other considerations in the learning-teaching act. The elementary school teacher who, for example, concentrates entirely on only the social-usage aspects of arithmetic ignores the fact that mathematics is built upon a deductive system. After years of exposure to such arithmetic, the student remains unaware of mathematics as an organized field of human inquiry. Similarly, unless the social studies teacher is familiar with historical method, the class may move romantically from era to era and locale to locale without coming to grips with the rigorous method of the historian. A too limited or an erroneous view of content in the teacher's span of control deprives all but the self-directing student of an education.

Synthesizing the Components of the Learning-Teaching Act

In planning for teaching, the skilled teacher visualizes a synthesis of the student, something to be learned, and a process through which student and something to be learned are to be united. As previously suggested, the kind of synthesis depends on the teacher's internalized conception of where he hopes to go with a given group of learners and certain insights into his own ability to carry the group forward.

It is conditioned, too, by the materials, facilities, time and space at the teacher's disposal. In effect, the teacher poses certain organizing centers for learning—catch-hold places—for moving forward educationally. In large measure, the adequacy of these centers is dependent upon the adequacy of the organizing framework—span of control—developed by the teacher.

The needs, interests and wants of students are inadequate as the *sole* basis for organizing the instructional program, however important such considerations may be as a beginning point. Similarly, subject matter must never be *both* the point to begin and the point to terminate learning. But learners and subject matter, together with the processes through which behavioral changes occur, constitute the solid matter of the learning-teaching act.⁴ These factors are largely controllable in that the teacher knows they will always be present and that a body of lore about each is available. New insights constantly emerge but at least the teacher can develop a framework for encompassing and dealing with additions and changes. In many ways, the information in these categories provides the basis for a science of teaching. Insight into them is requisite to planning and, ultimately, to setting up effective centers for learning.

Variables in Planning and Organizing

The creative teacher is an artist who synthesizes the components of the learning-teaching act under conditions that cannot always be predicted. Influences that shift like the weather upset the planning of even the most mature and experienced teachers. These influences find their way into the classroom through teachers and students who become "carriers" of attitudes which affect learning. The teacher serves both as a screen in keeping some influences out of the classroom and as a guide in dealing effectively with others. His success in dealing constructively with influences that could be disrupting stems in large measure from his control of the more stable factors that can be anticipated in planning. Following are a few samples of the variables that cannot be neatly planned for but which can become positive influences when the teacher is aware of them.

⁴ For further elaboration, see John I. Goodlad, "Three Dimensions in Organizing the Curriculum for Learning and Teaching," *Frontiers of Elementary Education III*, Vincent J. Glennon, editor. Syracuse: Syracuse University Press, 1956. p. 11-22.

Conflicting Goal Perceptions

To get launched on his first teaching experience in an eight-grade, one-room school, the writer was given three courses of study: a pink one for the primary grades, a blue one for the intermediate grades, and a yellow one for the two junior high grades in the class. Each of these formidable documents contained an impressive list of educational objectives challenging teacher and class to work toward all the virtues ever expounded by human beings. The writer taught 56 periods a day in pursuit of these goals: according to his primitive arithmetic, seven subjects for each of eight grades gave a total of 56 lessons. But not much constructive learning occurred. After six weeks of frustration for teacher and students alike, both became vaguely aware that something was wrong. Teacher and students now held a goal in common—the identification and solution of a discomforting problem. And for the first time, paper goals were in some danger of accomplishment!

Teachers have drives and these do not always coincide with high-sounding statements of educational objectives. Students, too, have drives and these often conflict both with the paper statements and the drives of their teachers. These personal drives of teachers and students are dynamic in contrast to the static nature of paper goals. They channel human energy in their expression, energy that is thus diverted from the attainment of less compelling goals.

Attainment of program objectives is unlikely when teacher goals and student goals are at cross-purposes. Teachers must plan, then, to let students have a meaningful part in the planning so that teacher goals, student goals and paper goals come to the surface where conflicts may be examined. Little children can help decide what they will do next and how they should behave when the teacher leaves the room for a few minutes. Older children can plan their day and evaluate its effectiveness. By the time students are in the intermediate and upper elementary grades, they should be planning both their weekly schedule and units of several weeks' duration. Students who leave the elementary school without such skills are walking indictments of their teachers. They learn these skills by having many opportunities to practice them.

The creative teacher sets goals. But he anticipates the emergence of goals that cannot be planned for in advance. When unproductive goals appear to block productivity, he provides the opportunity for these new goals to be expressed and, hopefully, to be dissipated.

When unanticipated goals appear to be productive, he strives for group acceptance of these in order that all members of the group may move toward common purposes.

Inadequate Perceptions of the Curriculum

The courses of studies prepared for and by teachers are intended only as guides to planning and teaching. But, often, teachers come to view the suggested content as sacred. As the teacher said to the supervisor about the dairy and the grocery store, "They're in the course of study, you know."

Teachers are urged to use the interests of learners and the problems of the community as organizing centers for learning. But can one pay simultaneous homage to both the topics outlined in the course of studies and children's interests or community problems? The supervisor suggested that the steam shovel be studied, but what would happen to the Post Office and the Police Department? The dilemma of the teacher and the apparent conflict here often create tensions not conducive to learning. The dilemma and the tensions can be relieved in part by distinguishing between constants and variables in the curriculum.

In planning, the teacher must search for guides to the selection of what is to be taught. The concepts, skills and values in well-defined statements of goals provide criteria for selecting learner interests and community problems around which instruction can be organized. The teacher then asks regarding such emerging interests and problems, "Will they contribute to the building of this concept or that skill?" If no unique interests and problems emerge, he may then decide to proceed with the topic in the course of studies. Vision of the concepts, skills and values to be developed provides stability and degrees of freedom in teaching. The framework thus established gives the teacher security in departing from the course of studies in the selection of topics for study. These concepts, skills and values are the relatively constant curricular threads; topics in the course of studies, learner interests and community problems are the multi-colored beads from which specific learning stimuli may be selected.

Prevailing Perceptions of Coverage

Teachers are guided in varying degrees by prevailing expectations for what shall be "covered" in given periods of time. General expectations are derived from the graded lock step of American elementary and secondary education: long division in the fourth

grade, fractions in the fifth and sixth, percentage in the seventh and eighth, and so on. Specific expectations often are set by departmental chairmen, principals or supervisors. But perhaps the most formidable concept of coverage is that imposed by the teacher upon himself and subsequently upon his class: up to here by Thanksgiving, to this page by Christmas, half the year's work by the end of January, and so on.

Arbitrary, content-dominated prescriptions can and do block the teacher from using dynamic principles of learning. Students should indeed pursue a pace that challenges the slowest and the quickest. But this means differing rates of progress for differing capacities, as Chapter Four so well points out. A pace determined in advance for all on the basis of content-to-be-covered is a destructive pace, ill-suited to the differences present in every group of learners.

The teacher, of course, needs an awareness of what constitutes adequate progress for "average" students of a given age. Such an awareness helps in seeking to quicken the pace for the fast and to retard it for the slow. But such an awareness is something to be brought within the teacher's span of control and not into the classroom. The teacher must "screen out" the inappropriate pressure of arbitrary coverage and set a pace appropriate to classroom realities.

Prevailing Perceptions of Standards

Throughout America is heard a cry for higher standards in our schools. It would not be difficult to show that many students are neither using certain capacities nor developing others to their full potential. Any conscientious teacher dealing each day with 35 (or 150) widely differing individuals will readily confess that seeking to challenge all of them is probably the most frustrating aspect of his work. But the threat of imposing an arbitrary higher standard upon all is unlikely to produce higher level performance by all.

In some communities in the South, educators have been told that they should seek to raise the standards of Negro students in order to prepare them for easier integration with white students. The word has been passed along to teachers—often with devastating classroom results. Raised standards do not equate with increasing the pressure to learn. The learning that results often is of a sterile, rote sort. The writer visited in the classrooms of some dedicated Negro teachers who reacted conscientiously to the call to elevate standards. In many classrooms, they had completely eliminated the use of direct experience so essential to concept formation. Field trips, for example, were too time-consuming, they said. "We must get on with our

teaching." The kind of discussion in which values are clarified had been all but eliminated. Teaching and learning were predominantly textbook-centered, with teachers asking factual questions and the students responding parrotlike. The educational clock was turning steadily backward. In learning, the shortest distance between two points is not necessarily a straight line.

The only concept of standards that has any validity to educators is that of providing quality learning experiences for all. This is what schools are for. The application of arbitrary achievement standards demands neither schools nor teachers. It requires merely test-makers and examiners who will call our young people together periodically to measure what has been memorized.

Quality learning experiences cannot be of "high standard" based upon an arbitrary norm for all. But they should be of high standard in regard to certain internal characteristics. These internal characteristics are discussed in some detail in the next section of the chapter. Above all, quality learning involves a dedication to learning of the sort discussed in Chapter Eight. Such dedication is not too much to ask of all enrolled in our schools.

When teachers pay attention to the expanding body of lore that underlies professional behavior and encompass it firmly within their span of control, they discover that achievement standards go up. The faculty of the Englewood (Florida) Elementary School engages each year in concentrated study of a curricular area. In 1954-55, science was selected for study.⁵ The group, in regular weekly meetings, never referred to higher standards as such. But it talked much of curricular organization, the scientific abilities to be developed in all, the basic concepts appropriate to elementary school science, and the kinds of instructional activities appropriate to certain age groups. In the achievement tests given just as these discussions were getting under way, the fourth grade scored 3.4 years when, according to national norms the average score should have been 4.8 years. Twenty-four months later, the group was tested again. The score now was 7.1, a gain of 44 months and an average achievement of 0.4 years above the specified national norm.⁶ What appeared many times to be the

⁵ For a report of this work, see John I. Goodlad, "Illustrative Programs and Procedures in Elementary Schools," *The Integration of Educational Experiences*, National Society for the Study of Education, Fifty-Seventh Yearbook, Part III, Chicago: University of Chicago Press, 1958, p. 173-93.

⁶ Unpublished Stanford Achievement Test results, Englewood, Florida: Englewood Elementary School, 1957.

long, slow way around—improvement in the quality of learning for all—actually proved to be the shortest distance to “higher standards” of accomplishment.

Surely all teachers receive a warm glow of satisfaction from the accomplishments—all kinds of accomplishments—of their students. They will be denied these satisfactions if they allow inappropriate pressures to seduce them into planning short-cuts to learning that violate what they know about the nature of learning. As attractive as such seduction may appear to be, it can lead, nonetheless, only to disillusionment.

Certain Perceptions of the Learning Process

Almost everyone who has had a little learning thinks that he knows something about learning. To the average layman, learning appears to be the simplest of accomplishments, even though his own learning may have involved considerable travail. You simply take a child of a certain age and expose him at a reasonable pace to what is to be learned and—presto, he learns! If he does not learn right off, prod a little. Perhaps even a mild threat or loss of some privilege will do the trick. Teaching becomes a process of keeping the seat of a child's pants to a chair and his eyes to the page. Lack of learning is largely a result of “poor discipline” on the part of the teacher and perversity or downright laziness on the part of the child. Little wonder, then, that teachers and psychologists have had such a difficult time in convincing the public that the notion of emotional blocks to learning is anything more than pedagogical gobbledegook thought up to confuse the gullible taxpayer.

The limited concept of learning suggested above, particularly if held by authority figures such as parents, can be devastating in its effects upon students' learning. As pointed out earlier, it is becoming increasingly apparent that energy and creativity in addition to intelligence and motivation are essential to learning. A highly motivated and highly intelligent person can be a highly anxious person. A highly anxious person may be tense, rigid and noncreative. Energy that might be used in learning gets swallowed up in coping with anxiety. Adults whose view of learning is limited impose the very demands that dissipate student energy, stultify creativity and inhibit learning.

The teacher's grasp of learning processes may be quite adequate but his planning must still provide for the management of anxiety that is carried into the classroom by the students themselves. He cannot effectively screen out anxiety arising beyond the classroom. But

he can seek to provide an environment wherein inappropriate stresses can be analyzed and their fraudulent nature exposed. Above all, he can seek to provide the timing and pacing that keep nonproductive anxiety arising from classroom tasks down to a minimum.

The Teacher Selects Centers for Learning

In planning, the teacher views alternatives for classroom action. He projects his vision to the point where his students actually catch hold of a problem, idea, theory or principle and move it somewhere in time and space. Such a catch-hold point is referred to in subsequent pages as an "organizing center" for learning. Something as concrete as a book may become an organizing center for learning. But a book is a book and nothing more until it is made to serve human motives. When it is made to serve teaching motives, it is an organizing center for learning.

Organizing centers are productive or nonproductive to the extent that they satisfy certain specific criteria. These criteria are derived from the various factors comprising an adequate teaching span of control. The characteristics of the good organizing center enumerated below, then, are guiding principles derived from the wide variety of data discussed earlier and are applicable to the highly specific task of selecting classroom alternatives for learning.

The good organizing center for learning encourages student practice of the behavior sought. If students are to develop problem solving skills, they must practice problem solving. But if they are to solve mathematical problems, they must practice solving this particular type of problem; problems of minority groups will not do. If cognition is seen only as the possession of information, it is unlikely that the teacher will plan for problem solving of any kind. It now becomes crystal clear that the behavior sought must be visualized at the planning level. Such visualizing demands the advance testing of a variety of possible organizing centers to be sure that they have almost literally built into them ample opportunity for student activity involving the behavior sought.

The good organizing center for learning is economical in that it contributes to the simultaneous attainment of several educational objectives. For example, a Viennese painting, *circa* 1925, may well serve to demonstrate effective use of color, to stimulate discussion of the political uncertainties of the time, and to encourage several sessions of creative writing. A potential catch-hold point must be

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critically examined, however, for negative as well as positive possibilities. A poorly selected problem in arithmetic may provide opportunity for quantitative thinking but also may leave the impression that a mortgage may be secured at 3 percent interest. Time is ever in insufficient quantities. Much time can be saved by planning to make double and even triple use of it.

The good organizing center for learning encompasses ability floors and ceilings of the group. This criterion involves attention to the nature of content as well as to the nature of differences in the learners. Some kinds of content, such as mathematics and science, require the development of rigorous concepts. Solving mathematical problems demands high-level insight into concepts of quantity. Learning to read involves acquiring skill in word attack. There are very definite limits to the range in concept or skill development that can be challenged by a single organizing center for learning. When these limits are narrower than the range in group abilities *in the particular skill or concept sought*, the teacher must plan to make the two more comparable by dividing the class into smaller groups. The development of certain social skills, on the other hand, demands the interaction of individuals varying widely in interests, abilities and backgrounds. The best organizing center for such learning may be one that plans for inclusion of the entire class. Either the organizing center deemed desirable must challenge the entire class or, then, the class must be divided so that the center is used for only the most appropriate group.

The good organizing center for learning builds on what has gone before and prepares for what is to come. Continuity and sequence are old concepts in planning. Interpreted positively, they mean simply that learning is more effective when an important idea or skill is repeated, each time at greater depth or increased refinement. Earlier, the concept of organizing elements was introduced. An organizing element is a curricular thread—a concept, skill or value to be developed and deepened. An organizing center is like a bead on that thread; and an important concept is built up bead by bead. The teacher must ask in planning: To what does this particular catch-hold point contribute? Does it emerge logically from what has gone before? Does it prepare for deeper learning? Positive answers to such questions suggest that the proposed learning is timed well in the sequence of things.

The good organizing center for learning buttresses and supports learnings in other fields. Other variables being equal, it is desirable

to plan to study the literature, art and music of nineteenth-century England at the time of studying political and economic developments of that period. Many elementary school teachers plan art, music and literature activities in part around the seasons of the year. In the elementary school, where a single teacher guides all or most of a student's learning, such juxtaposition is quite readily attainable. But careful dovetailing of several teachers' efforts is essential at higher educational levels. Otherwise, learning can readily be disintegrative rather than integrative. Instead of buttressing each other, several fields may contradict the learning-teaching effort.

The good organizing center for learning has educational significance in its own right. It was indicated earlier that few topics for study are sacred; that most are interchangeable. But this does not mean that any organizing center appearing to satisfy a passing whim of the teacher or students is acceptable. Whatever consumes the valuable time of teacher and students must in and of itself be worthy of their attention. It takes time to study the use of line and color in graphic art. Why not use good paintings for the development of these insights? Iambic pentameter can be understood only through the analysis of appropriate lines of verse. Why not use good poetry in developing this understanding? Good paintings and good poetry need not be beyond the understanding of even very young children. In fact, again and again we are astonished to find how badly we tend to underestimate the readiness of children for many learnings. This is especially true in the more creative and aesthetic fields where children's perceptions have not yet been contaminated by the plethora of sorry examples around them. Let us be sure in planning that the stimulus for desired learnings is itself worthy of storing on the ever-expanding shelves of human recollection.

The good organizing center for learning is comprehensive in that it permits inclusion of several ideas and several catch-hold points for differing student interests. An organizing center of limited complexity is soon exhausted of its appeal and must be replaced by another. The energies of a single teacher cannot keep up with the voracious consumption of a group of young learners, even when the students are brought into the planning and selecting processes. But a truly comprehensive center invites exploration at several points and poses a variety of student appeals. Once under the surface of the center, the student is only beginning to see the possibilities. For this reason, a broad social problem, a political issue or a unit on some

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phase of human life is virtually self-propelling and carries student interest from day to day.

The good organizing center for learning ties together students, ideas and materials in some meaningful fashion. In planning, the teacher perhaps sets forth several questions relating to censorship: Why was a certain movie censored? Why has a local committee undertaken the task of screening certain magazines from the drug-store counters? He sees these questions simply as means for focusing student attention. Then he plans possible next steps. How can questions such as these be used to guide discussion into larger issues? What issues would be most appropriate to the backgrounds of these students? Then the teacher thinks through the range and level of materials that will be needed in moving the group forward. Again, major problems and issues, more than specific topics or textbooks, lend themselves to this kind of planning.

The good organizing center for learning has capacity for movement—intellectual, social geographic or chronological. The class must be able to move somewhere with it. Such a capacity is almost always present in certain favorite units of study. Consider for a moment the capacity for all the above kinds of movement in a study of the Pilgrims or of the American westward migration. Such studies have settings in time that facilitate the relating of one epoch to another. They almost always involve the search for human freedom and convey the persistence of this search everywhere. They move human beings across whole continents and open boundless vistas to the inquiring intellect. By contrast, units on the Indians usually are disappointingly sterile. Time and place are difficult to establish and the social movement involved is invariably downward, away from freedom. Such difficulties are overcome with adults and could be overcome with children through a radical overhaul of content using sociological and anthropological approaches. The capacity for movement is thus re-created and these studies once more can provide human appeal. Teachers often keep diaries of their teaching that describe not only what went on but how satisfied they felt about each activity. In all probability, their greatest satisfactions would be shown to arise when the organizing center used offered almost boundless opportunity for movement in time and space.

Principles of the sort presented above provide a reasoned basis for working out constructive multiple alternatives for classroom activity. Without such thinking the teacher has no sound basis for

accepting or avoiding what may prove to be fickle, passing and non-productive student interests or for clinging to the rigid prescriptions of the textbook. Put into practice, they go far toward determining the teaching style or variety of styles that will characterize teacher behavior.

Summary: The Key Ideas

The right decision at the right moment is the essence of good teaching. Right decisions are those that time learning perfectly for the individual student. A series of such decisions moves the student forward at an optimum pace. Obviously, such timing and pacing are no more accidental than is the perfect catch by the professional outfielder. They are, indeed, complex but they can also be acquired. They are attainable only through the dedicated application of a reasonable amount of intelligence, especially in planning. Acquisition of teaching lore is no guarantee of good timing and pacing in teaching, but good teaching is not possible without it.

Quality learning occurs in an optimum habitat. Central to such a habitat is a succession of stimuli to intellectual inquiry. For the most part, these stimuli are the result of diligent, informed teacher planning. The teacher encompasses in his span of control those factors that affect learning. He anticipates those more elusive factors that could as readily block as aid learning if left to chance operation. He plans alternative organizing centers for learning, each satisfying multiple criteria of usefulness. The total process proceeds somewhat as follows:

1. The teacher brings within his span of control those factors most influencing the learning-teaching act. This involves not only identifying the most pertinent factors but also collating significant data relative to them. The factors are these:

- 1.1 Self-understanding
- 1.2 A sense of direction
- 1.3 Insight into learners
- 1.4 Insight into learning processes
- 1.5 Understanding of content
- 1.6 Time, space, and materials



2. The teacher anticipates the possible intrusion of influences or variables not central to teaching but often inadvertently carried into the learning-teaching act by students and teachers. He makes provision for screening out as many negative influences as possible and for turning others into positive agents. Examples of variables that obscure teaching alternatives are the following:

- 2.1 Conflicting goal perceptions
- 2.2 Inadequate perceptions of the curriculum
- 2.3 Certain prevailing perceptions of coverage
- 2.4 Certain prevailing perceptions of standards
- 2.5 Inadequate and distorted perceptions of the learning process

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3. The teacher, in the light of the "givens" and the "variables" as he sees them, poses certain teaching alternatives. In essence, he plans a variety of organizing centers for learning that:

- 3.1 Encourage student practice of the behavior sought
- 3.2 Are economical of time
- 3.3 Encompass ability floors and ceilings of the group
- 3.4 Build on what has gone before and prepare for what is to come
- 3.5 Buttress and support other learnings
- 3.6 Have educational significance in their own right
- 3.7 Are comprehensive
- 3.8 Have organizing capacity
- 3.9 Have capacity for movement

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4. The teacher now introduces learning tasks.

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5. Individual student learning processes are stimulated and changes in behavior occur.

If teaching is to grow as a profession, its decisions must be made on the basis of professional lore. Pertinent lore is amassing at an accelerating rate. We can ignore it and still teach. We cannot ignore it and teach well.

CHAPTER FOUR

The Teacher Introduces Learning Tasks

R. Murray Thomas

TEACHERS OFTEN ask themselves, "Do I use the best possible methods for introducing learning to students?"

To answer this question, a teacher needs criteria for evaluating techniques. Some teachers have such standards clearly in mind and can support them convincingly on psychological and educational grounds.

Many others, however, do not have specific criteria in mind. If asked why they used one technique of introducing learning rather than another, they usually must offer such vague or unconvincing reasons as, "I've always felt that was a good method," or "Those other approaches aren't really proper for children" (although the reasons are not made clear).

This chapter attempts to establish some clear criteria for evaluating ways of introducing learning. The chapter has two sections. The first consists of descriptions of two methods used for initiating learning; the second suggests criteria for evaluating how efficient these two methods were in presenting new learning tasks.

The reader probably can best discover his own criteria if he tries to answer two questions as he follows each classroom example in the first section: "Did this appear to be a good way to introduce learning to this class?" and "What standards have I used for judging the value of this teaching method?" With answers to these questions in mind he will be ready to compare his own standards with those proposed in the second section.

Learning Tasks Are Introduced in Two Classes

Judging Poetry in Junior High

In opening the English class, the teacher told his eighth grade boys and girls: "I am going to read you two bits of material. Each tells the same idea but in a different way. I want to know which of these two ways you like better. Or do you like both the same? But before our reading, let's be sure we all agree on what this word means."

He wrote *tutor* on the chalkboard, and a student said it meant *teacher*. The teacher then continued, "All right, here's the first way I'll read the idea:

A music teacher was showing two young people how to play a flute. The two young people asked the teacher whether he thought it was harder to play flute himself or to teach them to play.

"Now I'll read the same idea told a second way:

A tutor who tooted a flute,
Tried to teach two young tooters to toot.
Said the two to the tutor,
Is it harder to toot, or
To tutor two tooters to toot?"

The class broke into laughter.

Teacher: "Which did you like better, the first or second?"

Every student voted for the second version. When the teacher asked why, they gave such reasons as: "The first way was too common" and "The verse was humorous. The other wasn't."

Teacher: "Would you call these ways verse or poetry or something else?"

They thought the second would be verse or poetry but not the first.

Teacher: "Why do you think the author wrote it the second way? What was his purpose?"

Student opinions included: "Just to say something a different way." "To be humorous." "To make the words sound funny together."

Teacher: "All right. Let's try another idea that is said two different ways. You decide which you like better. And remember, there is no one right answer. This is a matter of your own opinion. You choose the one you like and stick with your choice."

He first read Stephen Vincent Benét's "Captain Kidd." Then he read a prose paraphrase of the poem. When the students voted, all but one preferred the first version.

The teacher again asked the students' opinions about whether they thought the versions would be called verse or poetry and why they thought the author wrote such material. Students' ideas were listed on the chalkboard.

Teacher: "So far in our discussion not everybody has really had a full chance to give all of his ideas. I'm passing out some dittoed sheets. On the sheet you receive you see a piece of writing titled 'John James Audubon.' Follow on your sheet as I read this aloud. Then below the material you see three questions. When we have read the material, write your answers to these questions which you see are the same we have already been discussing: 'Is this poetry or verse or something else? Do you like it? What was the author's purpose in writing it?' This will give everybody a chance to give his opinion."

The teacher then read Benét's poem about Audubon, and the students had time to write their answers to the questions. In like manner the class read and judged "It's Time for Lunch" (a clumsy four lines the teacher had purposely written for the occasion), "Night in a Mountain Cabin" (which had rhythm but no rhyme, and the lines uneven in length), and "At a Cowboy Dance" (which had both strong rhythm and rhyme).

Although this took 40 minutes, all students held their attention closely to the task. When they handed in their papers, the teacher explained, "I'll look these over tonight and I'll report the results back tomorrow so you will see whether we agree with each other."

On the chalkboard the next day the teacher charted the answers to, "Do you like it?" Without mentioning students' names, he read some of the reasons given for liking and disliking the different verses. These reasons were grouped on the board and discussed. Through the discussion the class drew conclusions about the varied reasons people enjoy different types of verse.

The third day the teacher charted on the board the opinions on, "Is this poetry or verse?" This set off a discussion which resulted in reaching conclusions about why people often differ with each other on what is called *poetry* or *verse* or *prose*.

On subsequent days the discussions and the reading of more verse continued with focus upon the same questions.

Improving Health Practices in Primary Grades

During the early weeks of a chilly autumn a teacher observed the following behaviors among her first grade boys and girls.

Several of them were beginning to have colds, and their mothers sent Kleenex to school with them. The children, however, usually lost the tissues before coming to class. The teacher also noticed that children frequently coughed or sneezed without covering their mouths or turning their faces away from nearby classmates. When they went to the lavatory at lunch they had to be reminded to wash their hands before returning to eat. The teacher noticed that one girl consistently brought soda pop from home and several others brought candy. As they talked about food, the children often mentioned that when they returned home from school they consumed candy, pop or heavily sugared ades. Then, about the middle of October when flu cases began to develop in the community, many children had to stay home. Soon the flu in the community reached epidemic proportions so that school was closed three days to help prevent its further spread.

As the teacher pondered these observations, she concluded that incidental teaching (such as a word about hand washing at lunch time) and weaving in health information in other learning activities were not meeting the children's needs for improving health habits. She decided to attack these problems through an organized study which she introduced in the following way:

When the children entered the classroom following the flu recess, their attention was drawn to the bulletin board that stretched across the back of the room. In the center of the display was a large drawing of a magnified microbe. The first graders clustered about trying to figure out what the drawing represented.

By the time school began the children's interest in the display was very active. The teacher picked up their before-school discussion by posing such questions as: "What do you think this is?" The question drew out a variety of opinions. The children concluded that they did not know what the figure represented. The teacher told them she had cut the figure to represent germs.

Teacher: "Real germs are very small, too small to see without a special kind of machine. Do you know what this machine is called?"

One boy said his older brother had a microscope which made small things look large. He told the class something about it. The teacher suggested that they might invite the science teacher to bring a microscope to their class so each child could see some real germs.

Teacher: "I know some of you have heard about germs before—

at home or on television. What do you think germs do? And where would we find them?"

One child said germs make people sick and they are found "on dirty things."

Teacher: "Are they on clean things, like clean pencils?" The discussion that followed revealed a considerable amount of disagreement. The teacher explained that there is a way scientists use to find out where germs are. Perhaps the class could try it. (Eventually the children had the experience of observing the growth of bacteria in a petri dish. Decisions to keep pencils and fingers out of mouths were followed quite successfully by the children.)

After more discussion of germs the teacher said, "We've talked about covering our mouths when sneezing and about washing our hands. Now let's think of other ways we can keep ourselves and other people healthy. I'll write your ideas on the blackboard."

From this discussion several health practices were listed including many that the teacher originally had planned as objectives for study. At the end she suggested two additional practices which the children had not mentioned. After school the teacher copied the list onto a chart which hung at the side of the room throughout the study during the next few weeks.

The following morning before showing a filmstrip titled *The Doctor*, the teacher again called attention to the bulletin board. She suggested that the children look in magazines to find two kinds of pictures: some that showed ways to stay healthy and others that showed poor health practices. The good-health illustrations would decorate one side of the display, and the poor-health pictures would be put on the other side. This plan was accepted with enthusiasm, and during the following weeks each child brought several illustrations of good and poor health practices. The teacher also planned to discuss health habits and diet selection with the parents in individual and group conferences. While health habits usually change slowly, the children's interest and cooperation had been aroused. Subsequent observations by the teacher showed some immediate changes in the children's health practices were taking place.

Criteria for Judging Ways of Introducing Learning Tasks

In introducing new learning the teacher asks three basic questions:

1. Are the learners ready for this learning?

2. Do they clearly see and accept the purposes of this learning or activity?
3. How can I best meet the differences in abilities, needs and interests among these individuals?

These questions point up basic criteria for ways of initiating learning. Each can serve in evaluating classrooms techniques like those described and in selecting the most effective methods and materials for a particular class.

Are the Students Ready?

The student is ready to learn when sufficient *maturation* has occurred, when he has *mastered prerequisite learnings*, and when he is *motivated*. That is, readiness is present (a) when the body—including the nervous system—is developed enough to handle the new task; (b) when the student has already mastered the previous learnings needed for grasping the new skills or ideas; and (c) when he really wants to learn the new skills or ideas.

If all three of these elements exist, the student has reached the "teachable moment." If one or more are lacking, trouble is due, and teaching becomes difficult or unsuccessful.

How can a teacher judge whether each of these elements is present and, if any element is lacking, what can a teacher do about it?

Maturation

What does the word mean? The term *maturation* is often confusing because it is sometimes used in a popular sense and other times in a more limited technical sense.

The man on the street uses the popular sense when he says, "that child acts very mature." He means that the child acts as old as, or older than, would be expected for one his age. From this popular point of view, *maturation* refers to the general process of growing up; no distinction is made between the aspects of maturing that were caused by *internal body growth* (the development of bones, glands, brain cells) and the aspects caused by *past experiences* (TV programs, examples set by parents, or lessons taught in school). In this sense, internal growth and experiences have combined to bring about this general maturity.

On the other hand, the psychologist uses the word *maturation* in a more limited sense. To him the maturation process involves only those changes in behavior that are caused by internal growth factors.

He reserves the word *learning* to refer to changes in behavior caused by the child's past experiences.

In this section we are applying the second, more limited meaning to maturation. The word as used here refers only to internal growth factors. A subsequent section will treat the effects of experiences or previous learnings.

What importance does maturation have for teachers? Three principles about maturation are essential for teachers:

1. *The internal growth or maturation needed for different kinds of learning comes at different times in a person's life.*

For example, before a child can learn to walk, certain changes in bone, muscle and nerve tissues must have taken place. For the average child this maturation has occurred by the time he is about 15 months old. The maturation needed before a child can efficiently learn to read seems to occur for the average child somewhere around the time he enters first grade. And so it is for all other kinds of skills and understandings. Each depends upon a pattern of maturation which tends to appear naturally at a particular time in a person's life. Thus the teacher needs to know at what ages children typically attain sufficient maturation to acquire specific learnings. The teacher discovers these maturation stages by consulting child development books, by inspecting the results of intelligence or aptitude tests, and by observing children at various ages.

2. *It does little or no good—and often does harm—to introduce new learnings before the appropriate maturation has taken place.*

Let us assume that an engineer, the father of an average-maturing four-year-old, intensely wants his son to get an early start toward a brilliant career in engineering. To initiate training for this career, the parents try to teach the child counting and simple addition. After several evenings spent "teaching" the boy, the parents become irritated by his almost complete lack of progress. The boy becomes increasingly restless and tries to find excuses to escape. His parents interpret this resistance as laziness which they must correct if he is ever to be a success. But their threats and promised rewards still fail to make him learn. The boy's nervous system has not matured enough to permit him to grasp these understandings about numbers and quantity. He is not perverse, he is just not yet mature enough for these particular learnings. This does not mean, however, that he has learned nothing. On the contrary, he may have learned many lasting attitudes. He may have learned that he is a somewhat inferior,

unsatisfactory boy, or that his parents think him so. He has learned that these things called counting and adding are very important to his parents and that arithmetic brings a boy much criticism and confusion. By now he may have developed negative attitudes toward himself and toward arithmetic. Later when he normally could master these skills in school, these attitudes may be barriers to his really learning to count and compute. Much harm can result from trying to introduce new learnings before sufficient maturation has taken place.

In other instances attempting to introduce learning too early in the child's life may not be harmful. It is just useless. To try to teach a child to multiply or to understand complex historical relationships before he has sufficient intellectual ability is a waste of time—for all concerned.

The degree of maturation that enables a person to *begin* to learn to walk, to read or to solve calculus problems is the minimum degree of internal growth necessary to learn a task but it is often not most profitable (even though barely possible) to teach the person at this early time of minimal maturation. Teaching in these early stages of maturation is a slow process, and the learner makes numerous mistakes before he masters the task. Later the child could master the same skills in much less time and with fewer mistakes because he would be further developed. Therefore, the school and the teacher should not only ask, "Is the child at least mature enough to learn this?" But they also need to determine, "Would it be more efficient to wait until later to teach this so that he may learn it in half the time and with fewer errors?" Learning thus needs to be paced over the entire educational program so that understandings may be built sequentially with the least waste of teacher and learner effort.

The school will probably find it wise to reserve or postpone the introduction of a skill or understanding if:

a. The skill or knowledge has little or no use in the child's life at present. Some learnings are best placed at a later time when the need for them becomes apparent.

b. Teaching the skill would take much time that would be better spent on learnings more immediately essential to the student.

c. Parents, citizens or other teachers do not expect children to have achieved the skill or information at this minimum stage of maturation.

3. *Each child has his own pattern and rate of maturation.*

For one child the maturation needed to begin reading efficiently

develops by age five, for another by six, and for another by seven. And so it is with the maturation for other learnings. Each person has his own rate of reaching these stages. This poses one of the teacher's most difficult problems: When and how should learning tasks be introduced to best suit the growth patterns of *all* children in the class—the early, average, and late maturing ones? Some answers will be found in the portion of the chapter that focuses on individual differences.

Prerequisite Learnings

What kinds of learning are there? The kinds of learnings which are prerequisite for attacking new tasks can be placed in two overlapping categories.

The first are those that fit into a *sequence of learning* in which each new step depends on mastery of previous ones. The dividing of whole numbers, for instance, typically depends upon prior knowledge of adding, subtracting and multiplying. The learner who has not grasped these earlier skills only wallows in confusion when confronted by the new one.

The second are those *supporting skills* that are not an integral part of the sequence but are necessary for successful learning. For instance, junior high students were expected to find answers to such questions as, "What are the world's main health problems?" To carry out this assignment, they needed skill in locating and comprehending material in reference books and periodicals. Those who could not locate the sources or could not read well enough failed, of course, to answer the question on world health.

In introducing new material the teacher needs to make accurate judgments about how well the learners have mastered the sequential prerequisite learnings or those which will support the new learning.

1. How do teachers judge mastery of prerequisite learnings?

Teachers have found many ways to gain information about the present knowledge or skills of a learner. They may: (a) ask teachers who know the student, (b) analyze past test scores, (c) give diagnostic tests, (d) recall the pupil's success on similar work earlier, (e) evaluate during class discussion, (f) use sociograms, (g) observe the mastery of new material and use numerous other evaluation techniques.

The teacher must decide which procedures are most appropriate for a particular class. In the earlier example, the eighth grade teacher used a *pretest* for judging his students' understanding of three aspects

of poetry. He depended on his *prior observations* of daily work for judging their abilities in reading and writing because, (a) he did not know the students' background in poetry, and this pretest gave him immediate information, and (b) by asking for written reactions to the verses he gained information about *everyone's* individual understandings and preferences in poetry. If he had used only oral questions, he would have learned the thoughts of only the few who would speak willingly in class.

The first grade teacher had estimated what the children already knew of health practices as she *observed their behavior*. She did not expect much prerequisite knowledge or skill beyond an ability to understand and talk about the usual interests of first graders. By using *discussion* to introduce the health unit, she determined to some extent the children's knowledge of health practices. She encouraged many pupils to give their ideas so that one or two would not dominate the discussion. She did not take contributions only from those who volunteered easily. Although these verbal responses did not include all the class as did the written ones in the eighth grade, they did help the teacher estimate the children's present health knowledge.

2. *What does the teacher do with his information about prerequisite learnings?* The teacher who finds that students have mastered the prerequisites may confidently introduce the new learnings. But if all of the desired learnings are not present, the teacher must estimate why they have not been mastered, and act upon this estimate. Several questions guide the teacher's search for the "why":

a. Were the students not mature when the prerequisites were presented? Teachers seek answers by consulting child-development books, by checking the students' intelligence and aptitude tests, and by observing how well others of the same age have learned the same information or skill. If the earlier learnings were not attained because of insufficient maturation, then the new material should not be introduced. The new task must be reserved until the learners' development will enable them to grasp it.

b. Have the children had a chance to learn the desired prerequisite material? If they were not sufficiently mature when they met it before, can they master it now? Did a previous teacher use ineffective methods so that they could not grasp the material? If any of these is true, the prerequisites must be taught before the new learning is introduced.

c. Has some emotional disturbance prevented a particular child

from mastering prerequisite material? If the child is mature enough and has had opportunities to have learned, emotional problems may have caused resistance to past teaching. Remedial techniques suggested by, or carried out by, a specialist may be necessary.

The preceding paragraphs have focused on learnings taught in a sequence, each step depending upon mastery of the previous one. For the first grade and eighth grade teachers in our examples this prerequisite was not a problem, because the teacher did not believe particular mastery was necessary for learning being introduced. Each teacher of course was interested in the students' present knowledge. In each case the teacher took measures to discover this knowledge so that teaching methods could be adjusted to students' present learning.

The supporting skills (the speech and listening skills needed in the first grade and the writing skills needed in the eighth) are not always handled the same as those needed in a learning sequence. Sometimes the teacher believes it essential to reteach supporting skills that have not been mastered. A high school physics teacher may reteach some algebra if he believes it is necessary to the present work of the class. Other times the teacher may adopt a different method which will work around the missing skill. For example, in the eighth grade poetry study the teacher first had thought that the students might read the verses silently and write the answers, each at his own pace. Three boys, however, were poor readers and could not be expected to get much from silent reading. Hence the teacher read the verses aloud while each learner read his own copy. Two boys who had trouble with written composition because of spelling difficulties were encouraged to ask a neighbor or the teacher for aid. The teacher's approach was altered to enable all to make progress toward the goals in poetry interpretation, although some of the pupils had disabilities in supporting skills.

The greatest problem teachers face is caring for the wide differences in every group. Some students have mastered prerequisites thoroughly, others have grappled them incompletely, and a few may have gained little or no command. Ways of meeting these differences are considered later in the chapter.

Motivation

*Why do people learn?*² Most psychologists believe that our thoughts and actions are directed toward meeting needs that arise within us or are stimulated by the environment.

As needs for food and warmth arise, we are motivated to action. We seek ways to relieve our hunger and chill. When we find the desired food and warmth, these needs are satisfied, so our striving ceases. We think and act no more until another need arises, perhaps a desire for affection. Being motivated anew, we start thinking and acting in ways we believe will satisfy our need for affection. And this continues on and on, with many needs constantly arising within us or being stimulated by our environment. This becomes the pattern of our lives: needs arise, we seek techniques for meeting them, we find and adopt these techniques, and thus we experience the satisfaction of having our needs subside as they are fulfilled.

A newborn infant cannot survive unless he has much help from adults, because his own powers of caring for his wants are so meager. But gradually his body and intellect mature so that he becomes capable of learning his own ways of satisfying wants. He soon finds that he cannot fulfill his needs as immediately as he might like or with just any method. Instead, if he is to survive and prosper he must learn methods acceptable to his particular society; otherwise the society punishes him.

The educator's job is to help the child gain the skills and knowledge that enable him to satisfy all of his needs in ways approved by a complex society. Learning cannot be poured into him; he must actively desire it. Before he will learn, *he must want to learn*. And he will want to learn *only those things which he thinks will satisfy his needs*.

This needs theory has several implications for creating and using motivation in school learning.

Meeting students' felt needs. The happiest situation occurs when students spontaneously seek to learn something that is also one of the school's goals. The teacher who hopes the class will come to understand the functions of the local town council is pleased when students ask spontaneously, "How come our town isn't going to have a skating rink this winter?" The students apparently feel that the skating rink is important in meeting their desires for companionship, exercise and esteem. They will diligently seek answers to their question, and the answers lie in understanding the way the town council functions. The teacher's problem of interesting students in working toward this goal has been solved almost automatically.

Although spontaneous interest creates a most desirable atmosphere for learning, much school learning is not recognized by children as being directly satisfying to their needs. The teacher's task, therefore,

often is to "motivate" the students. "Motivating" (getting learners to want the things the school hopes to teach them) can be carried out by: (a) awakening students to needs and to ways of satisfying them, (b) appealing to curiosity, (c) appealing to desire for adult or peer approval, and (d) capitalizing on the need to avoid disapproval or punishment.

Awakening students to needs and to ways of satisfying them. Children do not always clearly perceive their own needs or the best means of fulfilling them. Frequently the teacher must awaken students to these needs and to the best methods of meeting them. The effective teacher chooses materials and activities which convince students that the learning being introduced will profit them directly.

For example, a high school social studies instructor wanted students to understand their rights by law and the reasons for laws. He showed the film, *The Ox-Bow Incident*, suggesting that they view the film from the standpoint of the three men caught by the mob. Identifying themselves with the three men, the students were able to recognize what can happen to the innocent when a mob rather than a court rules. The class became eager to learn the safeguards that the law provides for them as youthful citizens. A study of local law and of the Bill of Rights became important because these boys and girls felt a need for this knowledge.

In the first grade described earlier, the teacher was promoting motivation during the class discussion of health. She asked questions about the characteristics of germs and about where they might be found. A few children thought germs caused sickness and harm to teeth. To clarify this point the teacher explained the relationships between bacteria and illnesses. The children began to realize that learning about germs could help them remain strong and healthy, and they began to practice better health habits.

The eighth grade teacher used his knowledge of the students' interests in selecting the poems for study. He did not take just any verses. He chose ones which could help them see that poetry often fulfills needs vicariously. He began with the limerick of the flute tutor because he knew that eighth graders often told similar jokes and enjoyed them. "Captain Kidd" was selected because young adolescents usually like to fulfill desires for adventure by hearing about such men. The teacher chose the "Audubon" poem because he knew that many in the group had been bird-watchers and members of the Audubon Club. He selected "Night in a Mountain Cabin" because he knew that many boys and girls had found camping trips pleasant.

"The Square Dance" was included for a similar reason. Selecting verses keyed to apparent student needs, the teacher sought to capture their attention and to demonstrate the ways poems can bring personal satisfactions.

Appealing to students' curiosity. When the first graders entered the classroom, they clustered about the new bulletin board display and began discussing it. They voluntarily posed questions and offered guesses about what the display meant. The true motive behind this behavior was not a need to enjoy better health or a need for approval from adults or a need to escape punishment. The word *curiosity* probably best names the force behind the children's interest.

The real nature of curiosity is not well understood. Perhaps all human beings desire to "make sense" out of things around them and to organize the impact of experiences into an understandable pattern. Whatever the basic nature of curiosity, the tendency to ask *why* and *what is it* and *how does it work* is a strong force in promoting learning.

When initiating learning tasks, a teacher often appeals to curiosity, to create an immediate urge to learn. Interest can often be aroused by arranging the classroom so that it puzzles students, as did the display of the enlarged microbe. A large box on the fourth grade teacher's desk, a new turtle in the kindergarten, a display of old firearms in the history class, or the skeletons of a dog and of a man in biology class may stimulate curiosity for learning.

The teacher may not create a display, but may stimulate curiosity by something he says. The eighth grade teacher phrased his remarks in a way that suggested a bit of a puzzle, and this puzzle led the students to poetry.

Appealing to a desire for adult and peer approval. Children have strong needs to be loved and approved by their parents. They also seek the approval of others who are important to them, such as teachers and agemates. Much motivation to succeed in school arises from these needs for approval.

Approval may be given informally, when the teacher says, "That's right, Frank" or "Good idea, Marcia," or smiles or nods or asks a child to be office messenger or group leader.

Adult approval is also more formally conveyed through report card marks, prizes, awards, gold stars, honor rolls, and scholarships. These symbolize approval because: (a) they show how the student is regarded in school and (b) they suggest approval by his parents (if success in school is important at home). Marks and awards are usually

stronger motivators for middle class children than for those from other classes. Middle class parents place more importance on doing well in school, and are more apt to give praise for high grades and censure for low ones. Lower class parents usually do not consider academic success in school very important, so their children see less reason to strive for grades. These symbols, therefore, are not very effective in working with these children.

In the earlier examples, desire for adult approval doubtless also stimulated children to learn about health and poetry. Needs for approval provided some of the power to learn.

In class discussion a student usually hopes for teacher and peer approval. If disapproved, he can be expected to hesitate or to refrain from speaking another time. Throughout the lengthy discussion in the first grade and during the brief introductory discussion in the eighth, each teacher gave positive, accepting responses to the contributors. The teachers nodded, said "Yes" and "Fine" to children, and wrote their ideas on the chalkboard. The children realize (though they may not be able to explain it clearly) that when they offer ideas, their needs for acceptance are fulfilled. If, however, their contributions were criticized or ridiculed the children would hesitate to offer views again.

Desire for teacher approval and for group recognition stimulated the first grade children who brought pictures of good and poor health practices. A need for being accepted resulted in close attention to the eighth grade teacher's report on student preferences of the verses read the day before. These adolescents, concerned with peer approval, wanted to know how their choices compared with their classmates'. They apparently also wanted to learn if their choices were the "right ones" in the teacher's eyes.

Capitalizing on the need to avoid punishment. A threat of punishment is involved, at least indirectly, in much motivation. For instance, a student wants to learn to play trumpet so he will receive recognition as a uniformed member of the band. If he learns to play, he feels rewarded because his need has been satisfied. If he fails to learn to play, his drive has been blocked and he interprets the failure as punishment. When a person does not reach a positive goal striven for, he feels punished.

Sometimes a teacher gives the student a choice between two alternatives, each of which seems to be punishment. For instance, his assignment may be: "Either learn that list of presidents or stay an

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hour after school." Neither alternative is a positive one which the student would like. He simply must choose the lesser of the two evils.

Which of these five approaches to motivation are most desirable? Of these approaches to motivation, the first two are the most desirable. Needs recognized and awakened by the teacher result in desire for this particular learning because the learner sees how it will improve his life. Teachers find greatest success as they utilize these two approaches.

The remaining kinds of motivation involve both advantages and disadvantages. Their analysis is important not because they should be used more frequently in classrooms, but because they are often misused when their merits and demerits are not clearly understood.

Appeal to students' curiosity is frequently desirable especially when the stimulus to curiosity is closely allied to the new learning. The microscope display not only aroused initial interest, but illustrated key ideas vividly. Sometimes, however, a device not truly related to what is to be learned is used to catch student attention. For instance, one teacher displayed a single large question mark on the bulletin board. When the curious students asked about it she said it was to attract their attention to a study of China. This stimulus, the question mark, caught immediate interest but did not lead logically to further questions about their next study: China. A ruler rapped on the desk would have caught attention as well and would have been as logically related to the learning being introduced. The question mark had no connection with the topic being presented, and did not arouse true interest in the study of China.

Many times the verbal approval of teacher or parent is desirable motivation. (a) It defines for the child the learnings that are acceptable and rewarded in his society. (b) Unlike formal report card marks, it is not limited to success in academic subjects but can commend any kind of behavior. (c) Such long-range goals as learning to read or compute well or to speak convincingly to an audience make it difficult for students to maintain motivation. Approval from time to time provides the psychological fuel needed to strive toward long-term goals. (d) Not only exceptional students receive praise. Verbal approval can be given for minor successes achieved by those of lesser ability.

Verbal approval by adults also can be undesirable as motivation, especially when based upon too high standards. The child who strives for unrealistic standards may end up hating what is being learned or perhaps cheating on tests. Appealing to the need for

approval has fostered bad rather than good changes in the child's behavior.

Marks and prizes too are sometimes overstressed so that the true purposes of schooling are lost or distorted. Marks and awards used as incentives can, of course, be initial devices. Learning which is later pursued as its true worth becomes apparent may be stimulated. Learning is more useful and permanent, however, when a child works toward a skill because it will improve his life rather than when he acquires the skill incidentally while striving for a high grade, mark or prize.

Direct threat of punishment is the least desirable form of motivation. Undoubtedly worthwhile things have sometimes been learned under the threat of punishment. The danger of other undesirable results, however, is great. The learner, for instance, may lie, copy others' work or use other undesirable ways to avoid punishment. Failing to see how the learning applies to his life, he may learn only by rote without meaning or insight. When the immediate threat of punishment is withdrawn, all efforts to learn may end. If the learner saw the relation of knowledge to his life he would continue pursuing it on his own. Sometimes the fear of punishment creates emotional disturbance and negative feelings are attached to all of learning.

How desirable were the approaches to motivation in the health and poetry units? In the first and eighth grade examples, each teacher depended on a combination of three approaches to motivation: (a) awakening student needs and showing ways to fulfill them, (b) appealing to curiosity, and (c) using needs for approval. No mention of grades or prizes was made nor was there any threat of punishment.

During the introduction of these learning tasks, the children, with few exceptions, seriously pursued the desired goals. The teachers observed no undesirable concomitants. Hence the approaches to motivation were judged to be desirable.

Do Students Clearly Accept the Goals?

If students know clearly the goal of learning, they are more likely to reach it than if they are kept ignorant of the goal. This truism is not always followed when introducing learning tasks; it is sometimes completely neglected.

In clarifying goals the teacher first decides specifically upon the objectives, and secondly makes these objectives clear to the learners. How were each of these steps accomplished for the poetry and health studies?

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The eighth grade teacher defined several specific goals: "By the end of the study the students should be able to describe: (a) different reasons people like poetry or verse; (b) distinctions made by people, including the 'experts,' among *verse*, *poetry* and *prose*; and (c) different purposes authors have for writing verse or poetry."

These objectives were made clear to the students by the questions about the verses the first day.

The first grade teacher set as goals: "The children should adopt these health practices: (a) wash hands before eating; (b) use tissues for wiping noses; and (c) eat only a minimum of candy and other highly sugared foods."

Rather than telling or talking about these objectives, the teacher encouraged the children to describe some good health practices they already knew. When their suggestions were pooled, almost all those that the teacher had originally set were included. She had several reasons for this approach. First, she wanted to discover the children's present knowledge of health practices. Second, she believed that attention and motivation would be better if the children took part in stating the goals. Third, she knew that the children might suggest additional goals. These health practices identified the first day may not have been well understood or accepted by all children. Subsequent activities were planned to develop thorough understanding and acceptance so that these goals would affect the children's health habits.

Often a teacher determines in advance only the general problem or skill needed. The specific goals then emerge through teacher and class discussions. With skillful teacher-learner planning, the students become strongly motivated toward goals which they have helped define. They gradually learn the steps in problem solving are to: (a) select a problem; (b) define it clearly; (c) determine the information needed; (d) decide how to secure the desired information; (e) to collect the data; (f) organize the data; and (g) use the information.

How Can the Teacher Meet Individual Differences?

Teachers are constantly faced with wide differences among students. Children differ markedly in maturation rate, in intellectual and physical abilities, in interests, and in the knowledge and skills which have been acquired previously.

When introducing learning tasks, the teacher decides which way

of organizing the class will (a) best care for the individual needs and (b) use teacher and learner time most efficiently. Sometimes the class begins as a whole, sometimes it is divided into groups, and at other times students work individually. Even when the class is dealt with as a unit, the teacher does not expect the same of each student. Instead, assignments are differentiated so each person's task is appropriate.

Methods of caring for individual differences are illustrated in the following examples.

Teaching the class as one group. Often the differences among students are not great enough to warrant dividing the class. The first grade teacher taught the class as a whole because all the children appeared to be capable of understanding the health practices being studied. She believed that their interests were similar because all of them wanted to be strong and free from illness. She also believed that the children would learn much from each other in group discussion.

The eighth grade teacher had two reasons for introducing the poetry study to the entire class. First, he knew little of their background in poetry and used the introduction as a pretest to discover differences among individuals. Second, he believed that all of the students were capable of progress toward the three goals of the introductory lesson. After analyzing the students' written reactions the teacher later differentiated assignments to suit each person's interests and abilities. During subsequent days each compiled a booklet of best-liked verses. As the students selected verses for their personal anthologies, the teacher suggested specific poems or authors that a particular student might like. The introductory activities were common to the entire class but information gathered by the teacher during these activities enabled him to differentiate assignments later.

Giving differentiated assignments. A teacher may often know enough about his students to differentiate assignments even while introducing new learning. A high school social studies instructor opening a study of labor-management problems, briefly described the terms *labor* and *management*. He then assigned to each student a particular source of information about present-day labor-management relations. The sources included newspapers, magazines, television programs, booklets from unions and business firms, and persons to interview in the community. Each source assigned was suited to the individual student's abilities to read, interview and organize information. The

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class then analyzed problems in relation to information found in the different sources.

Grouping according to need. A teacher may discover that differences in ability, maturation or previously acquired knowledge are so great that the class is unwieldy as a unit. If taught together, some methods would suit students of moderate ability, more capable ones would be bored and the less able confused. The teacher then separates the class into groups and introduces learnings which are appropriate to each group. This practice is commonly used for teaching reading in elementary schools and to a lesser extent for arithmetic, spelling and English usage. Groups, of course, do not operate for the entire year with the same children. Changes in the size and composition of the small groups are made according to the particular learning being introduced. Children in a fast group in general reading comprehension may belong in a different group for stress upon skills in phonics or word analysis.

In introducing learning tasks, the teacher finds greatest success: (a) if the new learning is suited to the learners' maturation and to the skills and knowledge already acquired; (b) if the students really want to learn what the teacher proposes; (c) if the goals to be worked toward are understood and accepted; and (d) if the class is organized to make the most of each individual's abilities, present knowledge, and interests.

These four principles are criteria in determining methods of introducing learning tasks. These criteria, applied to the illustrative health and poetry studies, indicate that the methods and materials used by the two teachers were well suited to their students and to the learning being initiated.

CHAPTER FIVE

The Teacher Helps the Learner Interpret His Experiences

Henry Clay Lindgren

THE TITLE of this chapter symbolizes the extent to which educational thinking has departed from traditional concepts of the nature of teaching and learning. Although in many classrooms today teachers still dominate the learning situation, it is increasingly recognized that the learner, too, is a prime moving force. The teacher plays a role of *helper* in learning while the responsibility belongs to the learner himself, in spite of sometimes determined attempts by the teacher to take over. The teacher's anxiety is understandable, for success or failure often depends on whether students learn what they are supposed to learn. But such anxiety does not make the student any more teachable; indeed, it may actually make him less responsive.

A second concept embodied in the title is that interpretation and experience are important in learning. A "common-sense" view has often led us to think of *external* factors in learning—the information to be absorbed and skills to be practiced. But this approach has proved both superficial and faulty. The time, effort and money invested in education are worth while only if the student remembers what he learns and applies it to life problems. And unless something significant occurs inside the *learner*, he will be able neither to remember nor to use what he has presumably learned. No matter how useful the information and skills appear to the teacher, unless the learner finds them to be meaningful and appropriate, everyone's time has been wasted.

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A third concept is that the *learner's* experience is of greatest concern. This, too, reflects a change from traditional thinking about education. Since the beginning of education, teachers have interpreted their *own* experiences for students, assuming that everyone could or should have the same experiences. Hence teachers often treat each subject according to the learning problems they themselves encountered, in the light of their own attitudes and perceptions. This does not take into account that different learners have different problems in learning, nor the marked differences between the experiential world of adults and that of children and youth.

A certain dependence on one's own experience is, of course, unavoidable. No one can develop a complete awareness of another's experience; our own experience becomes a lens through which the behavior of everyone else is viewed. Even when attempting to develop understanding of the experiential systems of students, the problem is complicated because not just one student, but all the 20 or 30 others in the classroom must be understood. The problem is both difficult and complex, but some progress must be made toward solution. To help students interpret their experiences teachers need general knowledge about the mental and emotional life of the learners. Each of us needs to have some understanding of the thoughts, feelings, attitudes and general patterns of behavior that are characteristic of the social groupings and the ages of the children we teach. We also ought to be familiar with the ways in which children learn, and the kinds of problems and difficulties they are likely to encounter. Such knowledge should be part of the professional background of each teacher.

The teacher who is effective in helping children to interpret experiences is both a scientist and an artist. Teachers are scientists in the sense that they use information from psychological research about children and develop and test hypotheses about better methods of teaching. They are artists in ways of bringing knowledge and skill to the task of helping children to learn. The term "artist in human relations" comes to mind as characterizing the teacher who is vitally concerned in helping children interpret their experience. This ability cannot be picked up merely through reading textbooks or sitting in on lectures and discussions, for it is more than a technique and more than competence in subject matter.

When the psychological atmosphere of both the school and community was more authoritarian, a teacher could do an acceptable, even a creditable job with little more than a knowledge of the subject

and ability to control the class. Educational success in those days was evaluated according to the student's ability to sit still in class and to pass examinations. But today students must be able to think, to work without close supervision, and to find effective solutions to everyday problems. To help accomplish these ambitious goals, an environment has been created at home and at school that is freer and less "structured" than in other generations or, for that matter, than in most other countries of the world even now. This freedom both facilitates and complicates education.

On the one hand, students are free to develop wider varieties of skills, interests and talents than in the older educational framework. On the other hand, both students and teachers receive less support from what might be called the "structure" of the school. A couple of generations ago, society, school and teacher had definite ideas of what they expected students to accomplish. These expectations were readily translated into examinations of subject matter which gave concreteness and definability to education. Teachers and students felt more support and assurance. Today, this security of authority is lacking, and teacher and student are more on their own. The greater degree of freedom in the classroom creates complex and difficult problems—calling for a teacher who is a professional, who is both scientist and artist, and who sees problems as a challenge and not as a threat.

What "Interpretation of Experience" Involves

The process of "interpretation of experience" forms a natural part of everyday life. Trying a new restaurant, we decide whether we like its food and prices well enough to go again or to recommend it. Listening to a political candidate, we mentally sort his arguments and compare these to other ideas on the same subject. We ask whether our impressions resemble other appraisals we have heard. In each instance we relate the new experience to an already existing hierarchy of values, goals and judgments.

Sometimes we pay a penalty for *not* interpreting experiences. We might, for instance, overlook the notice that says property taxes are due and payable; a few months later we receive a statement for delinquent taxes, plus a fine for late payment. Can we really be considered to have "had" the first notice if we did not see it? An event (the arrival of a notice in the mail) outside the range of our perception (that we did not see) cannot be considered an experience. But if we *did* see this notice, we did not give it our attention, and

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hence did not sense its importance. The arrival of the notice was an experience that was not adequately interpreted.

These homely examples illustrate the process in the classroom when students interpret or fail to interpret experience. A student who encounters a new idea may examine it carefully to see its usefulness. He may compare it with other ideas on the subject. Or he may give it cursory attention and go on to something else. In the first instance, the student has an opportunity to learn, to grow intellectually, and to expand his capacity for dealing with his environment. The examining of this new idea adds to and modifies previous experiences.

If, on the other hand, the student chooses to ignore the new idea, he cannot be said to have "learned" anything.

Needs, Interests and Attitudes

Interest in the student's learning from classroom experiences implies concern about his needs, interests and attitudes. A student is more likely to give major attention to an idea that promises to answer needs which *he* feels. A sixth grader trying to read an article on science is puzzling over the word "geology." He is told, or discovers by looking in the dictionary, that "geo-" may be found in several words having to do with the earth, and that "-ology" as an ending signifies "a branch of learning or a field of science." He begins to think of several words that contain "geo-" and "-ology," and discovers that their meaning for him is enlarged. Perhaps he vaguely remembers having been told that tracing words to their origins helps to explain their meaning. Such an approach never had much meaning for him until now, when the method meets a need that had not existed previously. Because he has an *interest* in understanding the article he is reading, his *attitude* is favorable toward taking the time and effort to interpret this bit of experience.

Every teacher, on occasion, has painstakingly explained a certain concept or process—say, multiplication by two-place numbers—only to find later, that not more than half the students had gained even a working comprehension of the technique so carefully described and demonstrated, and applied by the students themselves. Study of the failure of some to learn would probably uncover a variety of causes—emotional, intellectual and social. Most of these children probably had made some kind of interpretation of their experience while listening to the teacher explain how to multiply by two-digit numbers. Some may have concluded that the process was complex and too difficult to

be learned and remembered. Some decided, perhaps, that the multiplication of two-place numbers was of no practical use to them and hence of little interest. Some may have noticed that addition was somehow involved, and concluded that multiplying two-place numbers was not much different from adding two-place numbers.

Differences in the Experience of Individuals

Since the ability to multiply two-place numbers is a basic skill, the teacher must give attention to these students. For some, it is enough to cover the same ground again; for others, the teacher must discover the part of the process that is causing difficulty. The teacher creates new situations, provides new experiences and helps children to develop more accurate interpretations. In doing so the teacher recognizes the individualized quality of each learner's experience and the unique interpretation of meaning each makes.

The teacher's discoveries remind him that the "experience provided" for students is an abstraction, a symbol in the mind of the teacher. No two children have the same experience, any more than they could have the same personalities or the same skin. Each child brings to learning his own and unique arrangement of needs, attitudes and interests, and he interacts with each experience in a unique way.

Similarities in Children's Experience

Fortunately for teachers and their objectives, however, each child's experience also resembles that of others. The more similar the social, intellectual and maturational background, the greater the similarity. Thus the teacher may find that many students who succeeded in multiplying two-place numbers came from middle class homes where academic progress and learning are accepted as part of everyday life. A few of the children who failed are those, some from middle class homes and some not, who are beginning to resist the pressures of school. Some may be boys who are coming to feel that school success is "sissy," while others may be experimenting with a little rebellion. These interpretations are quite different from those of the more successful children. The teacher who helps these children in acceptable interpretations of experience with two-digit numbers, must also give attention to their interpretations of other experiences in and out of school.

Emotions Affect Educational Experience

Lorraine Marcus was an eighth grade junior high school student. When midterm reports were handed out, Mr. Phelps, Lorraine's

homeroom teacher, noticed that her marks ranged from "C" in English and social studies to "F" in arithmetic. Until that moment, he had never given Lorraine particular attention. She was quiet and reserved, did not take part in discussion or ask for help with assignments during homeroom period. Now he began to observe her while she went through the motions of studying. She was not fidgety or distractable, like Herman or Lyle or Brenda; she seemed rather to be uninterested and depressed. She might appear to be looking at her textbook or her notebook, but after watching her for a day or two, Mr. Phelps could see that her eyes were seldom on the page. And, although he had little time to work with individual students, he decided to have a talk with her.

Lorraine seemed surprised and puzzled when Mr. Phelps said that he wanted to see her, but made no objection. The first appointment led to others, and by the end of the semester, Mr. Phelps had talked with Lorraine a dozen times. It was hard for her to talk at first, but gradually she opened up.

As Mr. Phelps thought back over their first interviews, he saw that Lorraine was a girl who had no self-confidence and who was discouraged about her ability to succeed in school and to gain friendships. Her records showed that she had done better-than-average work in the past; intellectual capacity was clearly not the problem. But she was new to the school and to the community; Mr. Phelps was sure that this was part of her difficulty. He was equally sure that there were other influences—perhaps family relationships or the rapid changes of puberty—which could not be determined without further study.

During the interviews, Lorraine began to talk more freely about her loneliness and her attitudes toward her teachers. She made only vague and brief references to her life outside of school, and Mr. Phelps did not urge her to talk about this. He was an interested and sympathetic listener. During their interviews, he would often raise an interpretive question: "I wonder why you feel as you do about Miss Michaels?" or "Sometimes studying just doesn't seem to be worth the time or effort, does it?"

After several interviews, Lorraine began to give more attention to her school work. Although she did not develop real enthusiasm for her studies, she did work methodically and effectively. She was not optimistic about success, and when her grades began to improve, she was inclined to say that she was just lucky. Toward the end of the semester she was beginning to make some friends.

From the standpoint of school learning, Mr. Phelps had helped Lorraine to reinterpret her school experiences. The problems in her educational life had at first seemed insurmountable. Lorraine's difficulty was emotional rather than intellectual; she did have the mental capacity to succeed. But her failure was just as real as if she had had below-average intelligence. Her problem was larger than the inability to interpret classroom experiences; she was also having difficulty in interpreting and in coping with other experiences in her life. Mr. Phelps' invitation to use him as a counselor enabled Lorraine to examine and to revise some of the interpretations she had been making. Although aware that Lorraine's troubles lay in her interpretations, he was sure that his role was not to tell her how she should change them. Such suggestions as: "Try to outline what you are reading," and "Be friendly to others and they will be friendly to you," could be of little help. Lorraine was struggling to keep some balance in her life and the teacher's attempts to give advice would be confusing and heighten her sense of failure. What Lorraine needed, Mr. Phelps thought, was an opportunity to "talk through" her problems. And that was the opportunity he gave her.

The "Search for Meaning"

Viewed in its broadest dimensions, learning is the search for meaning. In an analysis of the "primary principles of learning," Russell N. Cassel states that situations must be "structured" or organized by the learner before learning can begin. Situations that have no meaning cannot be dealt with effectively; they must be examined, classified and analyzed until they begin to make some kind of sense. As Cassel says, ". . . effective learning only emerges from and through meaningful relationships; it cannot emerge from situations devoid of meaning."¹

Although the interpretation of experience gives new meaning to a situation or a problem, some meaning must be present before interpretation begins. The new meaning develops in relationship to the older, pre-existing meaning. Lorraine, for example, was unable to progress in school—that is, she was unable to make positive interpretations of her classroom experiences because they had little meaning for her. Her personal problems had far more meaning and monopolized her attention. It is not surprising that she could see little relationship between these problems and experiences in the class-

¹ Russell N. Cassel. "Primary Principles of Learning." *Peabody Journal of Education* 31:215-26; 1954.

room. She was so preoccupied with her search for meaning in her personal experiences that the demands of the school made little sense. When she was able to talk out her problems and find more meaning in them, she was able to redirect her attention to classroom learning. She again began to see them as important to her present and future welfare—that is, she could see some meaning in them. Because school in general began to have more meaning, she was able to proceed with the task of searching for the more specific meanings through the interpretation of classroom experiences.

The Teacher Is Concerned with the Learner

The description of the personal nature of experience and its interpretation implies that interpretation of experience must be done *by the learner* if it is to produce learning. The teacher cannot perform this function for the learner. The question naturally arises, "What can the teacher do?"

This question is difficult to answer except through observing skilled teachers as they deal with interpretation. And we would find that although each teacher would behave somewhat differently there would also be some basic similarities.

Developing a Background of Meaning

Teachers who are successful in creating classroom situations first try to give students a background of meaning. One teacher may go through an elaborate circumlocution before taking up a new topic. Perhaps he uses a form of Socratic questioning that seems at first to bear little relationship to what follows. This may stimulate the interest of the students, however, and help them to see relationships between themselves and the learnings to come. Another teacher may spend no time in leading up to a topic, but may feel confident that the psychological atmosphere of his classroom leads his students to expect meaningful and rewarding experiences. Still another teacher may depend heavily on teacher-pupil planning, knowing that students who take part in plans will feel personally involved. The experiences have a personal meaning for such students, because they have invested something of themselves.

Many children, particularly in the early grades, do not need much motivational preparation because they come to school already motivated and interested. Other children, in the upper grades and in secondary school, have developed defenses against becoming involved in classroom activities. Some students too willingly and too passively

look to the teacher for direction in learning; others are eager to learn, but on their own terms and in their own way. The pattern of motivational preparation will vary with teacher, students, school, community and subject, but unless students are psychologically ready, learning experiences have too little meaning to serve as a basis for interpretation.

In actual practice, preparation for learning is indistinguishable from learning itself. Each experience prepares for the ones that follow. Success and satisfaction or failure and frustration create attitudes and expectancies toward future experiences. Indeed, the *approach* that a teacher uses is often more important than the information and understanding he conveys. The approach influences the attitude of the student toward the subject, the school, learning-in-general, adults-in-general, and even toward himself. The approach includes not only techniques and methods, but the teacher's feelings toward the subject, the school, learning-in-general, the world-in-general, and himself. The teacher who respects students as persons displays this respect in the way he teaches. The teacher who has faith in the student's ability to learn and to respond positively develops and uses methods which recognize this ability. The teacher without confidence in his students uses methods that betray this lack of confidence. The student's success in interpreting experience depends to a large degree upon the attitudes and feelings that the teacher is consciously or unconsciously communicating.

The Teacher as a Facilitator

The teacher's prime role in the interpretation of experience is *facilitation*. The teacher *arranges situations* in which the student is stimulated and encouraged to find meaning in experience. The teacher acts as a *catalyzing agent* who *aids and supports* learning. He acts at times as a signpost to point out approaches to students who might stumble down blind alleys. Some might say that he takes them by the hand and leads them down the paths of rewarding learning. But "paths of learning" are symbolic, not real, and students cannot be led down them by the hand. Such metaphors also foster the belief that teachers have more power than they actually have to manipulate the learner and the learning processes.

Successful Interpretation Depends on Communication

As a facilitator or catalyst the teacher does many things. Indeed, he *must* do many things if the classroom is to stimulate positive

learnings. One essential task is to open up communication between teacher and student and between students. Traditionally, teachers have been most concerned about getting messages and ideas across to students. However, they need to be equally concerned about the students' ability to communicate. The social structure of the school and the classroom enables the teacher to dominate communication, but this is a power that may be either monopolized or shared. The teacher who monopolizes this power isolates himself from his students. He remains unaware of students' problems and creates an atmosphere that stifles intellectual growth. Growth is active, not passive, and it is through activity that the student learns. This activity may be "thinking aloud," or trying out ideas with the group. Questions or testimonials or critical statements may also be evidences of the learner's activity.

Nor is communication necessarily oral. The written report, the notebook and the quiz are some of the ways in which students and teachers communicate, just as they are ways whereby students interpret experiences. Some communication is neither oral nor written—the shock of students' faces when the teacher "springs a quiz," the perplexed expression of the student struggling with a difficult problem, the absorption of the student who is weighing out minute quantities of chemicals, the restless shifting and shuffling when the teacher is being unusually long-winded. These communicative cues, if the teacher is open and receptive, may be noted unconsciously. They are important in the teacher's relationships with students.

Putting Experiences into Words

Civilization depends to a large extent on people's ability to put meanings into words. A meaning that cannot be verbalized remains a private meaning, a meaning not shared. Lorraine's personal experiences had frightening and depressing meanings for her, meanings that she could not verbalize, because there was no one to tell them to. Mr. Phelps gave her the opportunity to express and share meanings, thus enabling her to solve some problems.

Lorraine's difficulty was in some ways not too different from the one that is troubling Herbert, a fifth grader, who is struggling with fractions. The problems will not come out right and he has not the remotest idea why. Miss Meyer, his teacher, asks him to work a problem and to say aloud what he does at each stage and why. This takes some urging, because Herbert is irritated and beginning to feel hostile toward the arithmetic textbook, fractions and arithmetic

in general. He complies grudgingly and, when he is halfway through the problem, stops and looks sheepish. He discovers that he was trying to add fractions with unlike denominators. Irritation vanishes as Herbert turns to the remaining problems with restored confidence in his ability to figure things out for himself.

Miss Meyer is too sophisticated to think that verbalizing steps in a problem will work with all students. She knew that Herbert had the capacity to work through problems on his own and needed reassurance of his ability. With another student, she may reverse this method and work the problem herself, stating what she is doing and why. Then the student may repeat the same problem and process.

The Importance of Empathy

The success of a teacher in opening channels of communication is related to his sensitivity to the feelings and attitudes of children—the quality called *empathy*. Every teacher was once a student and, for that matter, still is (or ought to be) a learner. Yet teachers sometimes forget to look at learning through the learner's eyes. They become so wrapped up in what they are trying to do as teachers and what they are trying to communicate that they forget that students may perceive what is going on through a different frame of reference. A teacher who is empathic is able to put himself in the student's place and see learning through the learner's eyes.

Empathic skills depend upon the teacher's willingness to listen and observe rather than upon his competence in subject matter. Time, effort and self-discipline are needed to develop an empathic awareness of the intellectual and emotional life of students. And the teacher who learns this communicates more effectively, even though he talks and explains less.

The student, too, needs to develop empathy to make the best use of his school experiences. Because students are less mature, they cannot be expected to be as empathic as teachers. Nevertheless, the student who has no awareness of the teacher's frames of reference will make little progress, whereas the student who learns to identify with the teacher finds his learning facilitated.

Helping Children "Get Outside Themselves"

Another dimension of empathy is important to learning. Cassel discusses the need for the student to "project himself" into the processes of learning.² Empathy implies the ability to "get out of one's

² *Ibid.*

self," to project oneself into a new experience. By such projecting and absorbing, the world of experience becomes a psychological part of the learner. The person who is emotionally insecure, self-centered, or so preoccupied with his own problems that he cannot permit himself to become involved, is unable to learn. Indeed, he will devote himself to building strong defenses against learning.

Helping children to this important step of "getting outside themselves" is a key problem in teaching. The methods are clearer in some subjects than in others. In literature and in social studies, for instance, children sometimes develop a feeling for the ideas of others through role playing—"sometimes," because going through the motions of play-acting does not necessarily mean that children are getting true insight into the problems and emotions of the parts they play. Role playing is one way of facilitating the interpretation of experience, but children may need help in interpreting the experiences they are having. The use of motion pictures may help students to project themselves into the experiences of others; but here, again, they will need a chance to think over, reflect and discuss what they have seen before real involvement can occur.

Sharing experiences in the classroom is a most useful skill in the repertory of today's teacher. Channels of communication, as noted previously, should be open between student and student, as well as between teacher and student. Much of what students learn, they learn from each other. Much of what they learn from the teacher does not really become accepted as a part of their experience until supported and reinforced by the influence of other students. This is particularly true of attitudes and behavior different from everyday practices. Group discussions are a useful method of helping children share feelings and interpret experiences, provided the children feel free to express themselves and to say what they really think.

The Interpretation of Failure

The student who is unwilling or unable to project himself into the world of experience around him is unable to make real progress in learning. Fear of failure is one of the most powerful deterrents to learning. The person who is anxious about failure will build defenses against trying a new skill or against permitting himself to become involved in learning something new. The fear of failure is deep-seated. Everyone, adult or child, is somewhat inhibited by this fear—a fear based, in part, upon our natural desire not to make a fool of one's self, particularly in front of others. In teaching, a great deal of failure

in the classroom is *public* failure. Natural fear of failure is heightened by our "success-oriented culture," a culture that places a high value on "success" and despises "failure."

A certain amount of failure is inevitable in learning. We seldom "get things right" the first time we try something new. By analyzing these mistakes we are able to correct them and thus have greater success when we try again. We learn through failures, large or small.

The student who is inordinately afraid of making a mistake is inclined to withdraw from active learning. He would rather not learn than expose himself to possible failure. Sometimes children who are quite bright are easily discouraged when they face difficulty. They may be used to easy successes in certain fields and cannot tolerate the frustrations of fields that are more difficult. Or, they may have fallen in with the cultural pattern of overvaluing success and derogating failure. A fairly common instance is the child who has learned to read before entering school and who is two years advanced in reading by, say, the third or fourth grade. At this point, he may find arithmetic more difficult, and he may become discouraged or upset or bored, even refusing to try.

There is no prescription to help children interpret mistakes and failures. A great deal depends upon children's attitudes toward failure. One child may regard a mistake for what it is—an annoying but unavoidable part of learning. Another child may be so anxious about his ability to succeed that *any* mistake assumes the larger aspects of *failure*, and he is unable to continue trying. Particularly in the early grades, children take cues from the teacher. If a teacher appears to be disappointed or upset or punitive about mistakes and errors, the children, too, will develop more than usual anxiety regarding even minor mistakes. A supportive approach by the teacher is likely to encourage the children in more positive attitudes.

Children vary in their attitudes toward failure. We need to develop the sensitivity that tells us whether a child is developing more anxiety about errors than is necessary or desirable. Sometimes a child seems to be unaware of his errors. Since an important part of learning revolves around recognizing and analyzing errors, it is as serious to ignore them as it is to be over-anxious about them.

The Teacher Is Concerned with Learning

Today's teachers face two challenges. On the one hand adult society expects the schools to familiarize students with that large

body of information, techniques, concepts and literature sometimes referred to as the "cultural heritage." On the other hand, teachers meet resistance or apathy from those learners whose interests are largely centered in the world of immediate experience. The teacher cannot "interpret experiences" that are a part of this cultural heritage if the learner does not somehow recognize these as germane to *his* experiences. The learner can of course be forced into a kind of ritual. The learner memorizes what is required of him and repeats it back to the teacher on examination, only to forget it. Sometimes teachers are forced to settle for this, but no teacher who understands his job would recognize this as "real learning"—that is, learning that has meaning for the learner and can be applied to life.

The Cultural Heritage

This chapter cannot argue whether society has a right to insist that children become familiar with the cultural heritage. But teachers cannot sidestep this issue by saying that the public's expectations are not geared to children's learning patterns. Much that is designated as the cultural heritage is abstract, esoteric, and ill-suited for children and youth; but much is not. A great deal, merely by virtue of being common currency in our culture, is an inescapable dimension of our daily lives. Much of this heritage is useful and necessary in solving problems of modern life. As such, it forms a part of our cultural environment. Because a child concerned with his own problems and preoccupied with the activities of the peer group is unaware of the importance of knowledge does not mean that he should be kept in ignorance.

The teacher's role is analogous to that of a watermaster in an irrigation system. He can keep the system closed, he can let in varying amounts of water, or he can open the sluices all the way and flood the system. If the teacher shuts the adult world and its concepts out of the classroom and keeps children occupied with entirely self-perceived and self-initiated problems, they may learn so little of the cultural heritage that they are poorly equipped for life. An alternate and more common extreme is to flood the curriculum with concepts that are so adult-oriented and out of step with childhood experiences that learning has little meaning. The problem is not choosing whether to shut out adult lore or to saturate children with it, but to teach in the best interests of both child and society.

The remainder of this chapter describes the approaches of two teachers aimed at promoting the interests of both child and society.

Miss Murdock used a bit of our cultural heritage—the history of the American Civil War—as a starting point for study of present-day problems and concerns. Mr. Wissack began with the students' problem—whether to remain in high school or to drop out—and related it to another aspect of our cultural heritage: the scientific method.

Learning Through Group Discussion

One method that teachers have used in recent years as a way of "building bridges" between learners and the cultural heritage is the class discussion. With skillful handling, a class discussion may become a common experience for members of the class, an experience that enables them to participate in the learning process and helps them to share ideas and interests.

Students can be involved in this approach in many ways. Miss Murdock discovered one of them accidentally while reading a newspaper debate on continuing experimentation with the atomic bomb. An editor speculated as to the possible or probable attitudes of George Washington, were he alive today and faced with this problem. Miss Murdock immediately saw the possibilities for her class in American history. She had frequently been disturbed by the common tendency to perceive history as something that "happened a long time ago," with no relevance for today. Although her classes were studying the Civil War, the controversy about the atom bomb could be used to broaden her students' experiences.

The next morning, she posed this question to her classes: "What stand do you think Abraham Lincoln would take on the question of the atom bomb if he were president today? Would he favor continued experimentation, or not?"

The students looked at her for a few seconds without responding. They had come expecting to be assigned essay topics about the Civil War, and Miss Murdock's question caught them unaware.

Noticing their hesitancy, she went on.

"Because of our admiration for Abraham Lincoln as a president and as a person, we know him perhaps better than almost anyone in history. He had to make decisions about issues as crucial and perplexing to the people of his time as the questions regarding the atom bomb are to us today. Now, what do you think he would decide regarding continued experimentation with the atom bomb if he were alive and president today?"

In discussion that followed, some felt that Lincoln would have favored continued experimentation, but others disagreed. Within a few

minutes, a heated debate was in progress. Miss Murdock let it continue, doing little more than recognizing speakers and restraining would-be interrupters. After 20 minutes of debate no new points were being introduced and students began to repeat ideas presented earlier. At this juncture, Miss Murdock brought the discussion to a halt and summarized the ideas presented.

"It seems to me," she continued, "that one of the reasons we cannot agree on the stand Lincoln would take is that we have different ideas about the kind of person he was. Perhaps if we knew more about him, the answer would be clearer. For example, I heard no one make reference to the decisions he actually *did* make on many crucial and difficult problems."

The projects that the students developed during the following weeks provided information about Lincoln's personality and the decisions he had made as president. They organized into two teams, representing opposite sides of the question, and at the end of each week presented the information they had gathered. The controversy could have continued all semester, but Miss Murdock suggested that they close this phase of their study since there were other problems, equally intriguing, equally controversial, and equally relevant to the problems of life today.

Later the class held an evaluation session. Miss Murdock asked the members of the class to assemble in groups of five or six and to discuss what they thought they had learned. At the end of a short discussion period, representatives of each of the groups joined in a panel to pool the results and present them to the class.

As might be expected, many of the students said that Lincoln had become "more of a person" to them; for them his life and his times had taken on more meaning; they could now "identify" with him and with some of the problems that faced him. The panel members reported that a few students had become interested in reading Civil War novels and biographies as a result of the study. Some students were not sure whether they had learned anything but they were beginning to look forward to the history period with greater interest.

A number of the students were also reported to have become interested in the controversy over the atom bomb. Some complained, rather wryly, that they were not as sure of their stand as they were a few weeks ago. They had read so much on both sides of the question that they were more uncertain than when they started. Others responded that the problems faced by Lincoln and his advisers must likewise have been confusing.

After the discussion, Miss Murdock pointed out that the students were experiencing a common phenomenon: as we become better acquainted with the factors and forces that are involved in problems, we realize how complex they really are. The uninformed person, she said, has little difficulty in making up his mind on crucial issues: everything is crystal-clear to him because he is not aware of the issues or has not bothered to consider them. However, the study of important problems need not end in confusion, she continued, because recognizing the basic issues is one step in the process of solving problems. Identifying basic issues tells us where we must focus our attention, where we must concentrate our analysis. This applies whether we are making decisions about experimenting with bombs, putting a freeway through a residential section, or developing the best legislation to suppress drug traffic.

Finally, she said, one of the hardest jobs is facing the task of thinking through an important problem. The easiest way to come to a decision is to base it on the opinions of others or to follow our own inclinations blindly. One of the reasons why we consider Lincoln a great leader was his ability to do his own thinking, to consider public opinion, but to come to his own conclusions.

Testing Hypotheses

The dropout rate of Normal High School is considerably higher than that of the other two high schools in the city. It is located in a neighborhood that had been an upper-middle class residential district, but which has deteriorated in value and appearance during the past few years. Although the students from Normal High who go on to college have made good records, fewer go to college or even graduate from high school, as compared to the other high schools. The faculty of Normal High are naturally quite concerned about the high drop-out rate.

After a faculty meeting in which the dropout problem had been discussed, Mr. Wissack, a science teacher, decided to see how the problem could be given scientific analysis. His homeroom group of tenth graders, which met for a half-hour each day, seemed like a good place to begin. The next morning, after the usual announcements, he talked with the class:

"As you all know, I am a science teacher, and like all scientists, I have a very active curiosity. The thing I am curious about today is what we call 'dropouts'—students who leave school before graduating. Now, I am not going to ask you to hold up your hands to

see how many of you are going to drop out of school this year—I would," he said smiling, "hate to start any kind of mass movement—but I *would* like you to write just one word on a piece of paper. Write 'Yes' if you plan to stay on at Normal and graduate; 'No' if you think you will drop out before graduation; and 'Maybe' if you are not sure. No names or other identification—what we want is a strictly anonymous poll. Just fold your papers and pass them up to the front and we'll tally them."

Five minutes later, the tally stood on the blackboard:

Yes	25
No	11
Maybe	5

"It's better than I thought," commented Mr. Wissack. "From the work I see in my classes, I sometimes think that about 90 percent of the students are trying to get themselves flunked out."

The class laughed at this, and Mr. Wissack went on. "I suppose there isn't much we can do about the 11 No's. They've made up their minds and we might as well cross them off our list³ and concentrate on the five who haven't decided."

One of the students asked, "What shall we do, try to talk them out of it? Give them all the reasons why they should stay in school?"

"I wonder," Mr. Wissack said, "do you think that would help?"

Some students thought it would, some not.

"They've heard all those arguments before," one said.

Mr. Wissack said that if he were a student who had not made up his mind about dropping out of school, he would like to hear something on both sides. The trouble was that everything was always presented as arguments. If he were a student who was thinking about dropping out of school, he would like to hear some *evidence*—not just arguments. One of the students said that made sense and some of the others nodded.

"Since we have conducted our poll anonymously," he went on, "let me represent the students who are undecided. As an 'undecided' student, I'd like to be convinced one way or the other. Let us find out

³ Actually, Mr. Wissack had not crossed them off the list at all; he was just as concerned with "saving" them as he was with saving the five undecided students. His remark was more in the nature of a challenge—a strategy based on the idea that people do not like having assumptions made on their behalf, and sometimes even change their behavior to prove that the assumptions are baseless. How such statements are made is, of course, very important. Mr. Wissack spoke seriously, as though he were accepting their decisions at face value, as *faits accomplis*, because he did not want the students to feel "defensive" about their decision.

what the arguments are, and then let us find out what the evidence is. When you come to homeroom tomorrow, let's see if you can't bring a statement of the arguments. If you can bring some evidence, too, so much the better."

About a quarter of the class brought in written arguments the next morning. No one brought in any evidence. Some of the arguments were hastily scrawled, penciled phrases; others were a page or more. Quite a few students said they had not had time to write up their ideas but wanted to give them orally.

Mr. Wissack said: "Let's see whether your points are already covered by the statements we have received. Leonard, since you are homeroom president, will you read each of these statements and I'll write the gist of them on the board. Eloise, since you are the secretary, would you mind writing down what I write on the board so that we will have a record?"

He drew a line down the center of the front blackboard, one side he labeled "Arguments for staying in school," and the other, "Arguments for dropping." On the first side the arguments were: "High school graduates keep out of trouble; can go on to college; get jobs easier; earn more; know more." The arguments for dropping ran: "Classes are dull and boring; high school education is useless."

When he had finished writing, Mr. Wissack turned around to find a number of hands in the air, demanding recognition. Taking in the situation, he said:

"I think that some of you would like to discuss these arguments right now, but we don't have much time left this morning, so the best we can do is to get as complete a list of arguments as possible, in order to see what kind of evidence we are to gather. Now, are there any arguments we have omitted?"

There were several, particularly on the "dropout" side. One girl said that girls who wanted to get married had to drop out, because the school would not permit the attendance of married students. Another student said that fellows who dropped out now had a head start on jobs over those who stayed in school. "Why stay in school," he asked, "when you could be out making good money?"

As the period drew toward a close, Mr. Wissack said: "We have an interesting list of arguments here. Tomorrow, let us try to figure out which of these arguments we will check and where we can find the evidence we need."

Actually, the discussion took several days. Some of the arguments, like the statement that school was dull, were eliminated. The class

said that this was not something you could really prove—it depended on the individual teacher, the subject, the student, and many other things. Some of the class members got involved in the question of whether students should marry while still in high school. Mr. Wissack suggested that this question be deferred to another time. The class decided to concentrate its efforts on gathering evidence regarding two contradictory ideas—one, that students were better off financially if they remained in high school until graduation, and the other that they were bettered financially by dropping out and going to work immediately.

These two ideas appeared to be powerful arguments to both those who wanted to finish high school and those who wanted to drop out. Furthermore, it seemed possible to gather evidence that would support one argument or the other. Almost everyone in the class knew individuals, both graduates and nongraduates, who had attended Normal High School. Certainly their opinion should be worth something as evidence. Mr. Wissack agreed.

"However," he went on, "don't forget that you are trying to convince *me*—the student who is trying to decide whether he should continue or drop out. And I am going to say that the opinions of former Normal High students, while helpful, will not tell me all I need to know. Can you think of anything else that would be more convincing?"

The students thought and discussed, without success. Finally one of them suggested:

"How about asking the folks who do the hiring?"

Mr. Wissack thought that *their* opinion would be most useful. He added:

"Stepping for a moment out of my role as the undecided student, let me also suggest that some of the publications of the U. S. Census might tell us whether there is any real difference between the earnings of high school graduates and non-high school graduates."

During the next two weeks the dozen or so students who expressed an interest in working on the project interviewed former students and employers and checked U. S. Census reports. Mr. Wissack worked with them helping them to interpret statistics and suggesting employers to interview.

It took more than a week for the class to hear and to discuss the reports. The persons interviewed had been unanimous in saying that students should stay in school. Some of the employers admitted that they paid their employees the same whether they had finished

high school or not, but as a general rule would prefer to hire graduates if available. All employers agreed that graduates had a better chance for promotion than nongraduates. Two of the students interviewed union representatives, who said that high school graduation was a prerequisite for admission to all apprenticeship programs. The students who had done research in the library reported that high school graduates were likely to earn more, in the long run, than nongraduates.

At the last discussion period, Mr. Wissack asked for another anonymous poll of intentions about staying in school. As he did this, he realized that some students whose attendance had been a chronic problem were now coming to school with greater regularity.

The results of the poll were as follows:

Yes	35
No	4
Maybe	6

As Mr. Wissack reviewed what had been accomplished during the study, he complimented the class on the research they had done and then continued:

"Most of you are, I think, quite aware that there are many points we did not cover in this survey. This is a homeroom class with only a half-hour a day, and not a research team with a 40-hour week, computing machines, and a fat budget. In consideration of the available time, facilities and training I say, 'We have done well.' We have shown, I think, that it *does* pay—financially, at least—to stay in school until graduation. This has evidently helped some of you to make decisions that I think will be better for you in the end. But equally important, we have learned that it is possible to find a better way of making decisions. We started out with two contradictory arguments which we treated as two hypotheses. We then went out and gathered evidence. The evidence we found supported one hypothesis or argument, but not the other.

"As a scientist, I maintain that we should do this kind of fact gathering much oftener in everyday living. All our decisions do not have to be made, as most of them are, solely on the basis of how we feel at the moment or on someone's skill in persuading us. Instead, we should apply the methods of science to our everyday problems far more than we do."

Teaching Students To Think

Perhaps some would say that Mr. Wissack's greatest success lay in getting some members of his class to change their minds about

staying in school. Others, however, will contend that the important element in Mr. Wissack's plan was the initiating of students into a new experience that required them to do some thinking, to develop hypotheses, to plan the gathering of evidence, and to evaluate their findings. The project showed students that thinking and intelligence can be used to approach such problems as whether one should drop out of school.

But perhaps projects like these seem all too elementary. After all, everyone knows that thinking is better than not thinking. Why should it be necessary to convince students that thinking is desirable?

The truth is, of course, that most people use thinking in very restricted ways, reserving it for a rather limited span of problems. Other problems are either avoided or ignored or are resolved on a random or emotional basis. What learners need to do is to recognize a problem as a problem, understand that its solution calls for the application of problem solving techniques, and apply the proper techniques. Too often, teachers concentrate on one aspect of this sequence: the learning of techniques that are potentially useful in problem solving. They themselves forage forth into the cultural heritage, locating, identifying and analyzing the problems of life, which they bring into the classroom so that students may have practice on solving problems. And of course a great many of these problems are highly artificial.

Mr. Wissack may be partially guilty of this. None of the students brought up the question of dropping out of school; Mr. Wissack did. He brought it up, however, in such a way that most of his students realized that it was a bona fide problem and not one invented to test school learnings.

Mr. Wissack had to suggest, furthermore, that the problem could be resolved on more than a purely emotional basis. Perhaps he should have depended more on the group's ability to discover that scientific methodology was applicable. On the other hand, it might have been unrealistic for him to assume they would have made such a discovery. How many adults, when solving a problem, elect the exacting and sometimes tedious methods of science in preference to the more emotionally satisfying snap decision?

Mr. Wissack took a number of risks. One of the greatest was his willingness to trust his students. He did not make decisions for them. Perhaps, as an adviser or counselor, he might have tried to persuade some to remain in school. But he saw himself as a scientist helping students to apply the scientific method—in other words, to think. In

this role, he makes suggestions as to techniques, he prods, advises, compliments and criticizes, but he still leaves a large area of freedom. In this area the group may succeed or fail, flounder or progress, make decisions or avoid them. Mr. Wissack hopes that by providing students this freedom they will make good use of it, and be stimulated to think and to learn.

The teacher who does not trust the group to do its own thinking will identify the problem for them, analyze it, and show them how to solve it. He assumes that learning results from watching an expert demonstrator. Mr. Wissack, perhaps because of his experience in science, believes otherwise, that learners must be doers as well as watchers. He believes that information and skills are important, but that attitudes and concepts are equally important. He believes, in other words, that it is as important for students to identify problems and to know how to approach them, as it is to know what facts to apply and how to apply them. Thus the strategy of his teaching is deliberately aimed at developing students who are eager to identify problems and to solve them.

The learner and his experience are the chief focus of interpretation. As teachers we should not fall into the trap of assuming that our experience is the same as the learner's or that the interpretations that make sense to us will make sense to him. The problem is to help the learner do his own interpretation—to help him learn to think. To accomplish this objective effectively, we need to be aware of the learner's needs, interests and abilities, since these are clues to the kinds of interpretations he is now making and is likely to make. In developing understanding of these backgrounds, we must also be aware of both differences and similarities in the experiences of the learners.

The chief elements in experience and interpretation of interest to us as teachers are largely intellectual. Emotional influences, however, have a prepotency that determines to a large extent the kinds of experiences learners will have and the interpretations they will make. Some learners are unable to make progress until the emotional problems that trouble them have been resolved.

Teachers can help the learner interpret his experience by insuring a background of meaning that enables him to make sense of new experiences, and by opening up channels of communication in the classroom. Effective communication depends not only on getting important ideas across to students but also in being aware of children's expression of emotions and feelings. Learners must be "open"

to experience if they are to make realistic interpretations; if they are completely self-involved, they are not receptive to the experiences that are going on even in the immediate vicinity. Fear of failure is one factor that leads to excessive self-involvement. It is unfortunate that failure evokes so much fear, because learning cannot take place without some kind of failure. The proper interpretation of failure is an important function of teaching.

As teachers, we must recognize that society expects us to help students become familiar with the cultural heritage. This is difficult when the knowledges associated with the cultural heritage bear no discernible relationship to the experiences of children. The teacher often has to find ways of introducing learners to the adult world in meaningful ways. Learning situations should be developed in such a way that they enable students to perceive relationships among several kinds of experience. Such techniques as group discussion and committee projects may be used to aid learners not only in discovering these relationships, but in making interpretations on their own—in other words, doing their own thinking.

CHAPTER SIX

The Teacher Responds to Evidences about Learning

Carol Smallenburg
Leland Newcomber

THE HUMAN individual, given a chance, tends to develop his particular human potentialities. He will develop, then, the unique alive forces of his real self; the clarity and depth of his own feelings, thoughts, wishes, interests; the ability to tap his own resources; the strength of his will power, the special capacities of gifts he may have; the faculty to express himself and to relate himself to others with his spontaneous feelings. All this enables him to find his set of values and his aims in life. In short, he will grow, substantially undiverted, toward self realization. And this is why I speak . . . of the real self as that central inner force, common to all human beings and yet unique to each, which is the deep source of growth.¹

CHIEF AMONG teachers' goals are helping students become aware of their abilities, helping them clarify values and aims, and helping them toward self-realization. To do these things, teachers need to know much about their students—what is told through direct communication of written and spoken words, and what is told through the everyday behaviors in the classroom. From these data the teacher directs experiences out of which pupils will develop their own particular human potentialities.

This chapter will illustrate some of the ways teachers become acquainted with their students in order to guide them to realize their own worth. Examples will be presented of evaluation procedures and classroom behaviors through which teachers see progress in learning. For illustrative purposes three major areas are used to show

¹ Karen Horney, *Neurosis and Human Growth*. New York: W. W. Norton & Company, Inc., 1950.

teachers assessing the direction and amount of learning. Areas to be explored will be: (a) learning to communicate, (b) learning to think and (c) learning to be a democratic citizen.

Two teachers with different orientations to learning will be described. The ways in which they perceive their roles in the learning process with children differ markedly. From the picture of the two teachers at work and the illustrations of sound evaluation techniques in the three areas of learning will come implications for sound evaluation practices, "A New Look at Evaluation."

Teachers Look at Learners and Learning

Teachers are responding every moment to children's behaviors. Each episode tells about knowledges students have applied, about skills they are improving, about appreciations they have enjoyed, or about understandings they are clarifying. From the classroom cues of children's behavior, teachers plan their instruction, assess growth, their own and their pupils', and revise immediate and long-range goals.

Depending on the meanings which they see in the cues, teachers interact with students in a variety of ways to influence learning. Perceiving their roles and relationships to the educative process differently, teachers respond to students' cues differently. A shuffle, a frown or grin, even the stillnesses becoming meaning-laden.

To the same cues one teacher may give quick attention, another may give silence: a flurry of harsh words during recess, an extra trip to the pencil sharpener, or the covert swish of comb over a slick ducktail.

Personifying two contrasting points of view about learners and learning, Mr. Jones and Mr. Smith talk about their teaching experiences.

Mr. Jones Looks at Learners and Learning

After a month of teaching, Bill Jones was asked, "Well, how's it going? What sort of class do you have this year?"

"It's the same old problem. My class just is not interested in learning. I know my job is to 'teach' them and make them learn, but it is hard today when children don't want to. The more you try to make them learn, the more they seem to resist. Test—and it's the teacher who is tested. Modern children just don't have proper respect for knowledge and the things they 'ought' to know."

"I understand, but how do you know that your class doesn't want to learn?"

"That's easy to answer. I can give you lots of illustrations. For instance, this morning when I assigned thirty pages to read in the social studies textbook for Friday's test, half of the class groaned. They asked if they could read just ten. They're always trying to get me to cut the assignments or call off a scheduled quiz. Here's another example: I have three reading groups to meet individual differences, but the top group won't read unless they have to answer questions at the end of the chapter. I sometimes sit right down with them while they read orally. My low group obviously doesn't want to read. I sit with them every day and each has a turn to read. I practically have to force them; none of them will volunteer of his own will. When I ask them about the reading, they act confused.

"You won't believe this, but the other day, I thought I'd give my class a break. One girl who is being privately taught in art has won several prizes at art shows. To make it easier for the class when they did their painting, I put her water color painting in front to give them ideas. After all the trouble, within a few minutes many children did not want to paint or even to learn.

"Arithmetic is the same. Everyone knows it is important to study arithmetic today, yet my class is continually asking why. How can I finish the course of study when I have to force every lesson? The more I try, the more trouble I have with discipline. I hate to think about the standardized test results this spring. Maybe, I'll have to show the class I mean business with more homework and low grades.

"Five of the boys think up all kinds of excuses to keep from playing during physical education. Frankly, I think they just don't want to make the effort.

"You know, I feel some sympathy with the criticism of public education. By the time children get to the sixth grade, they have lost interest, and don't want to learn. I guess the only answer is to tighten up and be stricter. Maybe if other teachers follow the lead, we can make them learn, even if they don't want to."

How Mr. Jones Sees Teachers and Learning

Mr. Jones reveals convictions about what a teacher should be and do. He thinks his job is to select specific information and skills, organize these into assignments, then test to check on the learning. The learner reads, listens to, and memorizes those assignments to answer questions in oral or written examinations. Mr. Jones evidently

believes that children will learn only what is assigned and only with reluctance. If the teacher as the authority values the knowledge assigned, his learners will also do so without question.

Convinced that children naturally resist learning, Mr. Jones perceives the teacher as directly responsible for forcing while the learner passively absorbs. He recognizes the acquisition of knowledge as the only kind of learning over which teacher and school have control. In his mind learning is viewed as intellectual, unaffected by the learner's physical development and unaffected by his feelings about himself or others. Social-cultural pressures appear to him to be unrelated to the learning problems of children in school.

Mr. Smith Looks at Learners and Learning

Mr. Smith, another teacher, responded differently to the question, "What sort of class do you have this year?"

"Frankly, I really don't know yet. These youngsters were brought in from three classes and are finding it hard to work together. Several in our class are new to this neighborhood, also."

"I have spent a good deal of time trying to find out just what I had in these thirty-four boys and girls. The cumulative cards gave some facts about home background and interests, and I stirred up a hobby show to learn more. The school's diagnostic testing program now in progress should help, too. I noticed at least three who were ill at ease when we had class talks about summer fun. I wonder why? Building rapport and discovering interests move slowly sometimes; I haven't been able to reach each one yet."

"Recently we got better acquainted when everyone told about his most interesting experience. The class was intrigued when we wrote about the important things we should learn this year. They also suggested how we might learn them. So far, I've been exploring their abilities and finding out something about their skills in independent work and group activity."

"My confidence was bolstered when I asked the children to help organize reading time. We wanted to plan so each could spend the time learning what he needed most. Sometimes I think children know more about how to deal with individual differences than we."

"One thing I know for sure—they are eager and should learn a lot this year if I can discover how to make their energy work *for* us instead of against us. You know, it is surprising how fast children can move when you find the right combination."

"I have learned one thing in the past. I teach better when I can discover the purposes, interests and backgrounds of the children. This may sound vague, but actually you can teach children almost anything when they feel it part of their own purposes. If I thought I had to teach every specific thing, I would certainly be discouraged. But children learn a good deal on their own from many different people and situations."

How Mr. Smith Sees Teachers and Learning

Mr. Smith believes that children want to learn and that they have purposes and needs to satisfy. The teacher's job becomes one of discovering their purposes and needs and relating these to what is to be learned. The teacher becomes a facilitator, marshalling motivations. He recognizes the significance of children's personal interests. Mr. Smith knows that children learn from many sources: their peers, their teachers. He assumes that children should have a share in determining what they will learn in school and how. In directing the children's energies to constructive rather than destructive outcomes, the teacher harmonizes the goals of learners and society.

The two teachers differ considerably in their views about learning. Each one will use quite different means to assess it. And their concept of pupil progress may be considerably dissimilar. No doubt they would agree on a very general statement of goals. But, if each one were to translate that general statement into concrete actions—knowledge mastered, attitudes developed, skills improved—their agreement would end. Asked to find answers to the following questions, "What is progress? How to measure it? How often?" each would choose different tools, handle the findings in different ways, and apply the results to individuals differently. If asked about taking into account the learner's suggestions or his feelings, each teacher would be likely to differ markedly. "Accept a variety of informal observations as a part of the evidence about the learner's progress? Consider the student's own growth or stress class standards?" The answers of the two teachers would be likely to emphasize different aspects of the teaching-learning situation.

The following three sections consider examples of teachers' assessing learning in order to find ways to help students realize their own potential. Each section will neither propose to cover completely all the possible aspects of learning in the area, nor to illustrate evaluative approaches at each grade level. It will be the purpose of each section to portray the spirit of a new approach to evaluation, indicate some fruitful procedures teachers are exploring and urge teachers to

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do their own creative thinking about adaptations they can try. These sections should be considered to be primarily introductions to any number of more extensive discussions about the evaluation of learning outcomes which are currently available to teachers.

The Teacher Responds to Evidences about Learning To Communicate

Learning to communicate, traditionally thought of as reading, writing and spelling, has long been a prime curriculum concern for the schools of America. Teachers have done some of their most perceptive work in collecting evidences about these learnings. For many years skilled teachers have analyzed the strengths and difficulties of learners through a variety of diagnostic tests, assignments, recitations, or remedial lessons. The goal to help a student "keep-up-to-grade" often dominated a teacher's planning; it certainly was almost the exclusive aspect of learning which teachers measured.

A broadened definition of communication skills and appreciations, new research approaches and findings with their refinements in experimental procedure are now available to help teachers. In the area of reading alone, a number of kinds of reading are now acknowledged, the stages in learning to read have been extensively studied, and successive levels of complexity of reading skills are now identifiable. Teachers have a number of tools for measuring progress in learning to communicate, for effectiveness in communication skills is no longer interpreted simply as being able to read, write and spell.

Advances in research on learning have also emphasized for teachers the role that emotions can play in facilitating or inhibiting achievement. If teachers now recognize that emotions play a part in learning, they can study behaviors which previously were dismissed as unrelated to classroom learning. The learner's culture-derived aspirations, his physical and social maturity, and the pressures of social environment which he brings to the classroom are all important. These factors must enter the teacher's consideration if he is to direct and facilitate learning, whether in the area of communication skills or any other.

Where does the skillful teacher look for evidences of learning to communicate? Information may abound in the informal situations which occur day-by-day in the classroom or in out-of-class events. Free expression activities yield evidence about pupil learnings which are sometimes not accessible through more formalized techniques.

Informal situations in everyday classroom life often show much about growth in the various aspects of communication. For example, third grade children write a birthday greeting to a classmate and do their own proofreading. A Brownie Troop committee helps its scribe with her notes. Seventh grader Bill, without being reminded, uses a moment during a study period to revise his social studies outline. Eleventh grader Sue reviews her briefly compiled notes for a committee report. Youngsters who are usually unresponsive during a class discussion are stirred to participate.

From informal situations like these and many others, teachers draw evidence about communication growth. They try to see whether pupils are applying classroom-learned skills functionally in daily life situations. The alert teacher collects these data in classroom, hallway, or school yard. To the goals in communication growth which he has developed for the semester's instruction, he relates the anecdotes. By collecting, organizing and interpreting such informal evidence teachers are better able to guide pupils' learning.

Formal testing situations may give teachers evidence about aspects of learning beyond those with which the test itself is concerned. Children's behaviors during the actual testing period may signal personality characteristics which need understanding. Observing during formal testing, the teacher watches sixth grader Charles take meticulous care as he fills in each section of his achievement test. Lucile, on the other hand, dashes through it, then stares out the window. Mary gets lost in the directions. Two boys sit a-slouch, shift gnawed pencils, hopeful the testing period will soon be ended. One blinks furiously; the other jabs at a passing pal for friendly reassurance once the signal to close is heard. A girl lingers to talk to the teacher about her problem with several sections of the test. More clues these, for the sensitive teacher to include in a file of information about his students.

Diagnostic and achievement tests, whether of the teacher's own construction or standardized in nature, give him opportunity to study test outcomes by items or sections. He can look beyond mass averages and total scores into meanings of sections, items or errors. He may find a thoughtful review of successes and failures on a test or its items to be necessary. The teacher may even need to consider whether he had made an appropriate selection of the test in the light of desired goals, performance on the test, and the nature of the group of students who must take it.

Individual test performances may need interpretation in the light

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of special conditions of health, language or culture. Because socio-economic class and caste pressures reflect in learning, a teacher like Mr. Smith in the preceding sketch delves into data about backgrounds. He may find important indications about his pupils—their attitudes and interest, their goals, vocational, personal or social, and their problems as well as their academic achievement. He may study cumulative records, review comments of previous teachers, search through health and home visit records, examine samples of creative work, discuss with counselors and community youth leaders and social workers for helpful insights. Through conferences with social agency representatives the teacher may learn, for example, that certain subgroups in the community put great emphasis on school accomplishment while others direct their children toward more immediate material satisfactions. Joe belongs to the latter group. Of his entire family, only one has finished high school. His teacher finds it hard to get Joe to show accomplishment in English. Joe finds more challenge in his part-time job than in his full-time school day; he yearns for the day when he can reverse the two, but is not yet old enough—a fact he explains with directness to his teacher at every opportunity.

Learning to communicate—indeed, all of learning—may be gravely influenced by pupils' feelings. A terse note in lacy script from Jane's parents gives an opening clue to the fact that the language and writing patterns used in her home are quite different from those Jane used at school. Jane timidly avoids the teacher's direct questions. Projective techniques provide evidence of a keen awareness of "difference." Jane's progress toward facility in writing and speaking may be inhibited rather than encouraged by overearnest "remedial instruction."

A time-sample of observations reveals that Leo, a member of a visible minority group, has stared at the same pages in his reader for almost three minutes. For future study a slip of paper with this dated observation slides into place in the teacher's file with others about Leo's school progress. While checking Leo's work habits, the teacher also notes Mathilde's restless movements: two articles dropped, a broken pencil, and a restyling of her ponytail. A glance at sociometric patterns for both children, recently collected by their teacher, indicates need for further study. Here are two children learning but slowly; their teacher evaluates their behaviors in a number of situations; she studies various data collected over a period of time; she probes for the "why's."

Mr. Smith was sure he could do a better job of teaching if he could discover the purposes, interests and backgrounds of the children. By making opportunities easily available for children to reveal information, a teacher may learn things not readily divulged. Through the stories selected to read, and those written, through anecdotes recounted, from problem-stories' responses, a teacher may see much. He may also encourage his pupils in further self-understanding. Lucy rarely puts more than three or four lines on a piece of paper. Her lengthy response, however, to a picture about an argument over a party dress opens clues of a mother-daughter conflict which later home visits substantiate. Role playing shows value conflicts which bothered Mike, a high school student of promise. His teachers were distressed over his struggle with correct spelling. Possible conflict became apparent between Mike's school experiences with English and his home experiences with three languages fluently and frequently used.

Evaluating Learning in Communication Skills

Evaluating learning in communication skills and appreciations means, for Mr. Smith, a series of planned steps. Even before meeting his class, he has tentative goals based on a broad conception of communication.

As Mr. Smith becomes acquainted with his pupils through specifically planned procedures, he realistically refines the goals—a process made more meaningful by enlisting his pupils' help. He visualizes goals in terms of pupils' actions—those he may reasonably expect his pupils to accomplish given their particular set of conditions such as age, grade, background, interests, abilities.

Data about growth in learning to communicate abounds in classroom situations. Mr. Smith plans with his pupils so that evidence is continuously available about the learning goals they have established. Both formal and informal evidences are sought: standardized tests and teacher- or pupil-made ones; teacher-directed critiques and peer-group evaluations; pupils' performance in different kinds of oral and written communication; evaluations made during opportunities to read for interpretive skill, for speed, for meaning, or for enjoyment; creative excerpts or topical outlines; projective samples and sociometric patterns; time samples of activity; unit reading reference lists and individual pleasure-reading logs; teachers' and parents' anecdotal comments about out-of-class performances.

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The Teacher Responds to Evidence about Learning To Think

Although teachers are experienced in measuring the learning of facts, "answer-telling" and "concept learning" cannot be equated. Discerning teachers explore behavior records, note situations in class, or study the products of classroom activity, especially during discussion times, to discern evidence of thinking. Problem solving and application-of-principle tests, self-evaluations, or post-event reactions are also rich sources of evidence about learning to generalize.

Teachers look for sequences of events in which children indicate a concept developing. They search for similar behaviors in a variety of situations to see if generalizations are occurring. By using a series of anecdotal records, for example, a teacher may find unexpected meaning. A sixth grade teacher had suggested that Al do a science demonstration showing that fire needs oxygen to burn. After several rehearsals, Al knew what he wanted to do and say; his demonstration was successful. In the following weeks he continued to repeat the experiment. The more Al puttered, the more his teacher pondered. Talking to Al, the teacher discovered changes. Now he was studying amounts of air available in relation to the time it took the flame to go out. What appeared to be the same experiment was really a different one; a review of anecdotal notes and some discussion with the boy indicated to the teacher that his thinking had moved to a higher plane.

The teacher who searches for evidence about learning to generalize helps the learner ask, "Why did we do it this way?" When children talk about the day's activity, review and criticize their accomplishments, discuss their reasons for action or the lack of it, generalizations emerge. A kindergartener plans his ship with care. He explains, "Yesterday it fell down because I didn't get the blocks straight." A primary child suggests provision for traffic regulation for the play community; his teacher sees evidence of a previous study of safety to and from school. Several children take over the care of a classroom aquarium; it is no coincidence that they ask about the problems of a clean water supply for their own city.

As a twelfth grade debater summarized issues in a current political campaign, he became aware of similar issues in historical campaigns. The teacher found evidence of his growth toward this generalization in a "unit log" which each student kept. His list of reference reading was also indicative of his thinking.

When checking on the irrelevance of arguments about a student council problem, applying principles of color and design to selection of graduation clothes or selecting appropriate woods and finishes for an industrial arts project, students reveal developing concepts and generalizations. Wise teachers note these evidences, for they are examples of thinking in life-like situations.

The teacher who collects such examples of evaluation relies on his observation and ability to record objectively events as they occur. Formal instruments may also be used to capture information about thinking. When teachers use them, however, they find it fruitful to adapt such tests to their own particular subject and group. Tests always depend upon the students' facility in reading and ability to follow directions. If the class is handicapped in these, the teacher may have to make adaptations. The content of the test may be so unfamiliar that the students are unable to demonstrate the skills in thinking which are being sampled.

An industrial arts teacher was discouraged at his class's response in a paper-and-pencil test at the close of a study of safety concepts. Could the problem be one of communication barrier? He devised situational and performance "questions" for the solution of which language was not a problem. He also invited his pupils to contrive their own and was awed by the enthusiasm his invitation received. Several pupils indicated ingenuity far beyond expectation based on cumulative records. One boy in particular was creative beyond his usual level. As rapport slowly developed, the youngster grudgingly disclosed a father's borderline relations with the law and a mother with fluctuating marital status. With home and school in conflict, the resulting pressure virtually reduced him to a slow-learner.

The skillful teacher searches for evidences of concept-building when pupils transfer work-study skills from one situation to another. For example, the "attack" a committee or an individual makes on a new problem indicates a developing generalization about a way-of-working. "Can we try the same steps we used for our last unit?" A suggestion to change the organization for a projected field trip is made after consulting post-trip evaluations from a previous semester. A class requests more use of community consultants as a result of successful experience with them for a unit on conservation. "They helped us get ideas we couldn't find in our texts or library books." A pupil raises a question with his committee about limiting a sweeping generalization found in the report. Another suggests, "Let's try it out—and see if it meets the criteria we talked about."

"Let's work out an outline. Then each of us can cover one section." "Could we plan at least one rehearsal before we present our study to the class? Perhaps we could tape it, then criticize it." Teachers encourage sound work habits with questions: "Have you checked the list yet to see whether anything's been left out?" "Do you think the report will hold the class's interest?" "Could we use some pictures to make the point clear?"

Whether such evaluative questions are posed by teachers or by pupils, they record the process of building sound work-study skills. Their use is evidence that pupils are growing not only from the information they are studying, but also from the way in which they deal with the subject and the manner of the teacher's direction of the study.

CHAPTER SEVEN

The Teacher Utilizes Group Forces

Murray M. Horowitz

EVERY TEACHER knows that there is more to his profession than seeing that children learn the subject matter and skills in orderly fashion in the outlined syllabi. When the school bell rings in September, the teacher senses in his own classroom the challenge of young minds and bodies transcending the content of mere textbooks. How can this challenge best be met? How can he be sure that the coming year will bring progress in the development of these young minds and bodies? How is it possible to coordinate the effort of individual and group to achieve the ideal? There are no pat answers, for which we can be thankful, because individuals and groups do not fall into tidy, stock categories. Yet, the teacher can draw on his knowledge and experience, and can learn from suggestion and example, so as to utilize successfully group forces, potentially one of his most powerful allies.

The democratic society is made up of individuals; it is also made up of groups. Such a society functions best when its parts mesh together, when agreement can be reached on common goals, and cooperation can be sustained in striving towards the achievement of these goals. Education plays its part in improving the functioning of both individuals and groups. Along with other forces, it shapes behavior patterns to improve individual and group living. Education helps to mold the mature person, armed with the skills, the reason, the techniques and even the emotions needed for enlightened citizen-

ship. At the same time, education works for improvement of man's social environment and group well-being.

To do justice to this dual responsibility, the school, as a formalized institution of education, must provide ample opportunities for the development of individuals within a group setting. Not only individual opportunity, but cooperative experience in group projects allows the individual to emerge, well-rounded and attuned to the fulfillment of his own needs and those of society.

Man is an ambivalent being. At times, he is a social, gregarious and cooperative creature. At other times, he is jealous, individualistic and belligerent. Sometimes, through the combined talents of many, a lofty bridge, soaring skyscraper, or graceful ocean liner is created. Then, through one man's genius alone, a moving book is written, a sensitive picture is painted, a baffling problem of space research is solved. Man functions best as an individual—or does he? He achieves most when working with others—or does he?

This chapter will emphasize the "group side," but this should not delude the reader into thinking that individual learning is unimportant. However, since some educational psychology textbooks teach individual learning almost exclusively, the fact that a child is usually learning in school as a member of a group causes the teacher's utilization of group forces to be an important consideration in classroom learning.

The Nature of the Classroom Group

There is an infinite variety in the composition of the parts of a classroom and in the situations which develop within it. The geographical location of the school, its social and economic setting, the physical features, the philosophy of administration, the nature of the teacher, and of the other individuals, even the weather, influence the process of learning. And does not each child represent within himself a complex of factors which are part of him, products of both heredity and environment, and malleable to some extent by all the experiences of living?

The classroom, however, is not only the sum total of the personalities within it or the environment around it. The class itself is more than a number of children interacting with one another and the teacher. The relations between class members, the relations between each member and the group, and the relations between groups are constantly changing.

The class is a group, although seldom a discrete unit. School records designate it by school, teacher, and grade level. Its composition may remain relatively unchanged for a time, teachers may call it to order or dismiss it as a unit, and it may occasionally receive criticism and praise as a whole. It may attract the loyalty of its members to varying degrees, and compete with other classes. But more often than not, the interaction of its members and of its cliques and subgroups will determine the very atmosphere of the class, and vitally affect the educational outcomes of its members.

At any one time the teacher might see the group in terms of its cohesion or division. Another look might see the relation of individual children to the group, perhaps singling out the deviate and the isolate for longer looks. Still other views of this complex structure might see the students as members of many groups or might attempt an evaluation of how well this class is able to operate as a group. Each of these cross sections of classroom group life might be examined here. These patterns are useful ones for the social psychologist as he develops and uses concepts about groups, but they are not useful for the teacher until they are applied to teaching. Thus, instead of discussing factors of group structure and function with illustrations of each, a report of the work of a classroom group will be used to show these factors in actual operation.

Getting out *The Mission Star*, the sixth grade classroom newspaper in a school in San Bernardino County, California, was the task at hand. In the left-hand column is an account of what was said and done when the group gathered to evaluate and plan after a 40 minute work session. In the column to the right are comments about the groups. Considerable restraint was exercised by the author when he refrained from comment in this column about the teacher's development of direct and concomitant learnings in skills and content. Since the intent of this piece is to study the teacher's utilization of group forces, comments are focused upon the group with special emphasis upon the teacher's leadership function.

Discussion

Teacher: During our planning periods many important and special problems and plans were discussed. Perhaps others have arisen?

Murray: I had some real help today. Brownie and Ricky met with the city editor and reporter of the primary page. Did everything work out okay, Brownie?

Comments on Procedure

The class is a group and a combination of groups. Each individual is also a member of one or more subgroups.

Brownie: Fay can tell you about the meeting she had about the drawing on the primary page.

Fay: Well, we had the meeting, but only three reporters came. Still, we decided on something.

Teacher: Do you remember that Penny suggested that everyone should have an opportunity to come?

Fay: No editors came!

Teacher: Let's consider the matter briefly. Why, in your opinion, was it possible for the reporters to come and not for the editors?

Rose: The reporters were interested.

Judy: Well, we could come too, because we didn't have to go out on assignments.

Penny: All the editors were very busy, and probably couldn't leave their work.

Teacher: One of the reasons for the success of our paper has been the sharing of responsibility. Our policies may be determined by the large group but often a few can help make other decisions. Fay, what was the decision of your group?

Fay: We decided we had enough stories to fill up all but one-fourth of our primary page. We can put Larry's drawing in that space.

George: That's still too much for a drawing.

Teacher: Why will we not be able to accept any more suggestions for this page?

John: The meeting for the suggestions is over.

Teacher: We shall say, then, that the editor of the primary page is reporting the final suggestions.

Ricky: Fay may be little, but she is sure stubborn.

Teacher: Is it necessary to be stubborn at times? When is it necessary?

Murray: In the city editor's case!

Penny: I'll say! He can't always let people do what they want or our paper wouldn't meet the deadline. Also, I think, Fay knows what little children would like about drawings for

Duties and responsibilities of members must be decided upon.

The teacher helps the group to understand its members.

To be successful, groups set policies by which they are guided.

To achieve goals, channels of communication are left open.

Group activities foster cohesion. Difficulties can be dealt with as a problem for the group.

the primary page. She talked to the primary teachers.

Teacher: Sometimes people think of stubborn behavior as bad behavior, but synonyms for the word are: determined, persistent, and tenacious, as well as holding firmly. If one believes in certain principles or ideas, it is often necessary to be determined or tenacious. Other times it is necessary to compromise, or adjust our ideas in order to work out plans together. Our evaluation and planning periods often require us to be persistent, or to compromise. Incidentally, how would you explain the meaning of evaluation?

Carolyn: Our evaluation period usually involves a problem and how we worked it out, or sometimes we sum up our progress, and what we did.

George: We look over what else is needed.

Babs: We always talk over our work and how good it is, or how we could do better.

Teacher: Your understanding is excellent. Were there evidences that other things were needed in today's work period?

Ricky: Mrs. Allyn's husband is being transferred to Pasadena. She's leaving; so is Mr. Aring (secretary and gardener).

Teacher: How we shall miss them! What is significant also about this in relation to *The Mission Star*?

Sue: Mrs. Allyn has always helped us so much. She showed us how to type correctly.

Carolyn: And she's our librarian.

Carl: When I cut my forehead she fixed me up.

Margie: We couldn't list all the things she has done for us; it would take all day.

Murray: Couldn't we put something in the paper to show our appreciation?

Lynette: I think we could make a manuscript in appreciation. She'd like that. (This sixth grade had made illuminated manuscripts as an industrial arts activity related to their social studies experience—*Modern Press and the History of Records*. They were very

The teacher leads the group toward an understanding of the deviate.

The teacher guides the members of the group in an evaluation of their work.

The teacher asks for, and gets, an additional problem.

Some irrelevancies arise before attention is applied to the problem facing the group.

proud of them and enjoyed decorating them in the style of the monks of the middle ages.)

Rose: Let's ask Larry to paint the one for Mrs. Allyn.

Babs: And Margie could do the manuscript printing.

Teacher: How about writing a cooperative note of appreciation during the Language Arts period today—in addition to the manuscript? (The class approved this plan.) Carolyn, what was the outcome of the work period regarding the editorial page?

Carolyn: Babs, Judy and I got our ideas worked out for the second page. We can start typing the master copy pretty soon. On the overflow page we have our appreciation to the custodians and Miss Kims' third grade poetry. George also wants some of his sports news on this page.

Teacher: Do you think the problem would have been solved in this way on a large city newspaper? Would a sports item be carried over to an editorial page?

LeRoy: Well, big newspapers have several pages for sports.

Teacher: Can anyone define the biggest difference between a school newspaper and a city newspaper?

Danny: Most big papers have lots of pages.

Penny: That's because they use A.P., I.P., and U.P. news coverage.

Teacher writes on board:

School Newspaper	City Newspaper
small	large, many pages
school news	local news, and A.P.,
	I.P., and U.P. coverage

*Informal planning.
Group agreements without need for voting.*

Subgroups permit interaction not otherwise possible.

Teacher helps group to clarify its problems.

An occasional summary helps the group to solve its problem.

Susan: The city paper is out for profit; we're a nonprofit paper.

Teacher: Would you amplify, or extend your statement, Susan? What is the meaning of nonprofit?

Susan: Well, we're not making money with *The Mission Star* because we don't charge for

Clarification of terms helps communication among group members.

it. (Teacher adds profit and nonprofit to the list on the chalkboard.)

Teacher: There are many other differences between our school paper and a city paper. If you think of more later, we'll add to our list. Were any other problems solved?

LeRoy: When I was running the galley-proof press, I noticed a word I thought was spelled wrong. I couldn't figure out what it was, but I just thought it was wrong. Connie helped me find out what was wrong.

Teacher: You're a fine printer, LeRoy, to recognize the need for a copyreader's help. Is it a good idea to think there may be need for improvement in one's work?

John: Yes, we should look into the matter.

Teacher: Margie, did you work out a solution to your story about the manuscripts?

Margie: I read over Ramona's story about the manuscripts, too. I think it is clearer than mine, so if we need any story to fill in, we might use hers.

Murray: Why not read both stories so we can decide, Margie? (Margie reads both stories.)

Penny: Both of the stories are very good, and they have excellent information. Perhaps we can use them both.

Carolyn: Margie tells about the decorating and writing, and Ramona tells about the making of inks and colors.

Teacher: Does anyone have an opinion on how both stories may be used in our paper? Connie, you read both stories carefully as a copyreader. What do you think?

Connie: Maybe they could be put together to make one article.

Joey: Then Margie and Ramona could both be the writers of the story.

Murray: Couldn't Alan put the stories together? He's our rewrite man.

Teacher: Alan, what is your opinion?

Alan: They'd make a very good article; I'll do the rewriting.

Teacher: Another reason for the success of the *Star* is your ability to accept suggestions

Desire for group approval leads to high standards of workmanship. Cooperation among members strengthens the group. Teacher's praise encourages group members and helps set group standards.

The group learns to be task centered in decision making.

Teacher helps group draw out and develop potentials of members.

The group often helps its members attain goals which they could not achieve otherwise.

Encouragement strengthens the group.

and figure out, or analyze the situation. Sometimes 11- and 12-year-olds do this better than many adults. Are there any other questions and suggestions?

This session with the staff of *The Mission Star* obviously does not illustrate all the factors of group structure and function. Just as obviously, another teacher might have taught the lesson differently, but the fact remains that *The Mission Star* group did illustrate a few important ideas about how groups can function effectively. The manner in which the teacher encouraged, helped and challenged the group may be worth special attention. Without knowing the group better, it is difficult to know whether the teacher offered too many opinions or made too many judgments. Perhaps the leadership might have come more from group members in a group that had worked together successfully over a longer period. By the same token, a group with less experience in group work might have needed even more teacher direction than was given here. How would you have done it?

Since we saw only one session of *The Mission Star* operation, and since the group goals, plans and operations were thereby somewhat restricted, an additional illustration with broader scope and less detail might be useful as an additional referent for further discussion of group activity in the classroom.

Learning Through Group Activity

A seventh grade social studies class had good reason for pleasure and pride about their study of Africa now just drawing to a close. Much of what they had learned about social and economic conditions related to geography had developed from their own plans and as a direct result of their own "research" and hard work. They now attempted to evaluate this work and to relate their findings to life in the United States and in their own city. Mr. Brown, their teacher, jokingly remarked that they knew Africa better than "home." After the first laugh and a further glow of accomplishment over how well they had studied Africa, Alice said that this was "funny but true." They did not know much about their own city. They should study their city in the same way that they had studied Africa except that they should get a lot of the "stuff" (later changed to "data") "from people right here."

Alice and her friends let one suggestion of "things to do" burst upon another like firecrackers in a package. These caught the interest and imagination of others as the idea took shape. Mr. Brown had

wanted this kind of study and enthusiasm. Both were valuable to the social, economic and geographic concepts to be developed. But things were moving too rapidly. The group was intent on "things to do" without asking "why?" What is worth knowing about our city? Why do we want to know? Brief discussion of these questions, based on learnings from the Africa study and derailed several times by other suggestions of "things to do," convinced Mr. Brown that these questions could come a little later. He shifted direction slightly with, "What do we want to learn about this city that we don't already know?" Sibyl acted as discussion leader and Dave recorded the "things to find out."

Most of the concerns listed could be asked about a neighborhood as well as a city, and several of them did involve study of the neighborhood. Mr. Brown asked what the geographical limits should be? The children's preference developed for restricting it to the neighborhood in which they lived. The drawing of more specific geographical boundaries for the study was listed under "jobs to do."

Bob added another idea, "If we are going to study our neighborhood as if it were a 'foreign country,' why don't we find out about the people who live here—the inhabitants?" This created immediate interest and several related questions. Should we take a census? Ring doorbells? Ask our parents? Ask our friends? What do we want to find out about the people who live here? Where else can we get information? Mr. Brown suggested the census report for the city and the publications of the local Chamber of Commerce as sources. The class went at it again. Could we learn anything from the bank? From the school and public libraries? From the principal's office? The superintendent's office?

Should we try to find out what kinds of jobs the "inhabitants" hold? Whether they have cars? A maid? Television sets? How many hours is T.V. watched each week? What kinds of programs are favored? What newspapers are read? Magazines? Books? Are there foreign languages spoken at home? Which ones?

The questions continued to flow, although obviously not all could be used. The class needed to judge which suggestions were to be kept. Then Mr. Brown pointed out that a few of their questions might lead to embarrassment. These were examined more carefully. Some were kept as they were, some were changed, and a few were dropped entirely.

"Task forces" were then formed, some to work on "geography," others on "sociology," still others on "economics," (new terms that

grew from the planning discussion). Each task force ranged from two to six children. The jobs of each, and how to avoid overlapping were discussed, agreed upon, and outlined briefly. Each team selected its own leader and began to decide upon individual responsibilities. As the work progressed over a number of class periods and with a few meetings at times other than regular class hours, each team met when necessary to discuss its materials and tie them together. The entire class met as a group for a few minutes each day and for one longer planning and evaluating session each week.

The tangible results were a large scale map of the neighborhood and a survey of living habits. Arithmetic was stressed as children drew maps to scale and prepared charts of percentages and ratios. In addition to oral reports, each team produced a written report as a chapter in the book entitled, *Our Neighborhood*. Finally, a discussion was held on the value of the entire study.

In addition to these results, there were a number of learnings about methods of work. Students suggested places where their methods could have been improved, and then they patted themselves on the back for the times when they were imaginative and skillful. The teacher raised the question as to the social values of the project. Prevailing sentiment showed that positive results had been attained in this more intangible objective. The teacher also learned where he could have participated more effectively.

This skeleton account of a group project in a seventh grade class is not meant as an example of "best practice" in curriculum development or even in methodology. It illustrates teacher use of group forces in methods of teaching, and provides another convenient referent for an analysis of learning through group activity in the classroom.

The Class and Group Learning

The class does not become an effective group just because its composition is stationary or even similar, just because it follows a standard program, or just because the teacher wills it so. Mr. Brown's class became a group when its members recognized, consciously or even unconsciously, that they were an effective group through their co-operative actions and their joint successes. This unity was fostered by student participation in the planning, and by accomplishment and evaluation of the work. It must have been a rewarding experience to Mr. Brown to feel, as did the group, that a good job in which all have taken part had been completed.

Children do not accept a truth merely because it is announced to them as such. Moreover, learning through verbal example is not necessarily effective. But when learners participate actively in the learning, as far back as the planning, improved results can be anticipated. At the same time, if the group makes a decision, as a group, its members will tend to act in accordance with this decision, even to overcoming previous inertia or resistance.¹

The classroom as a laboratory. What goes on in the classroom may never be repeated exactly from day to day, term to term, class to class, teacher to teacher. Every method of teaching or learning is not equally good, nor is there one which is best for all children or all purposes. The teacher must have some freedom to vary his techniques from class to class, even day by day in the same class, depending upon the situation and the group. We recognize differences between teachers, too, so that one teacher's most successful method may contrast with that of others, and still attain valid goals.

A teacher is encouraged "to play by ear," for if he is not successful with one method, continued devotion to it will not promise rewarding results.

The teacher should know which goals are most desirable for particular individuals and groups. He should be willing to examine what is being done at his own school and elsewhere, to learn from precedent, and to experiment with new and promising procedures. He should be open-minded, flexible and persistent in giving these experiments a fair trial.

The place of group activity. In utilizing group forces, the teacher improves his own efficiency and the end-products of learning as well. Group activity may occur in all skill or content learning if skillfully anticipated, planned and executed. Since it is related to purpose it is more likely to be successful under certain conditions such as the following: (a) The goal lends itself to group activity and is accepted by the group. (b) The activity is in keeping with the age, abilities and backgrounds of the group members. (c) The activity utilizes the services of all or many individuals. (d) The group is organized toward the goal and the means of reaching the goal. (e) The group is organized to evaluate its success and progress. Above all, group work

¹ Jacob Levine and John Butler. "Lecture vs. Group Decision in Changing Behavior." Dorwin Cartwright and Alvin Zander, editors. *Group Dynamics, Research and Theory*. New York: Row, Peterson and Company, 1953. p. 285-86. See also Lloyd Allen Cook, *Intergroup Relations in Teacher Education*, Washington, D.C.: American Council on Education, 1951. p. 112.

should not be seen as a methodological panacea in any sense. Only if the task at hand lends itself to group work is a group likely to be successful with it. As we check these general guides to successful group work against either *The Mission Star* or the neighborhood study, these group projects measure up well. Any shortcomings in group functioning are in the details rather than in the general conditions of group operation.

Group Goals

Just as individuals have goals, so do groups. As progress is made toward these goals, satisfactions become evident, and group morale and cohesion improve. When frustrated, the group may look for substitute paths to achievement or may deteriorate into antagonistic subgroups creating chaotic situations for the teacher. Group goals may be similar to the goals of individuals, particularly the most powerful members. More likely, however, group goals take on the characteristics of goals that individuals seek consciously or unconsciously. The goals of individuals influence those of the group, and the goals of the group influence those of its members.

The teacher and group goals. A teacher's relation to group goals first lies in discovering them and how they attract and affect the students. Only then is the teacher in a position to influence and extend goals, to link them to the work in the class and to assist in their realization. Teachers face difficulties in discovering group goals because some children do not understand their own goals or attempt to conceal them for fear of disapproval. Many children parrot purposes which they feel the teacher will applaud.

Determining goals. Recognizing these difficulties, the teacher is cautious in assaying and evaluating group goals. Observation is very important, and may be accompanied by direct oral or written questioning followed by group discussions. Since group goals are not always distinguishable from the goals of individuals and since both often change and may even conflict in part, knowledge of children, and especially of the ones in the classroom, is essential. Perhaps Mr. Brown's concern that the neighborhood study was being planned too rapidly reflected his knowledge of the difficulties arising from too quick and superficial acceptance of group goals. Were some of his questions aimed at discovering and clarifying goals? Were they also helping him to see how these goals were attracting and affecting the group members?

Cunningham² questioned children at different ages about their goals. Goals stated by ten- and eleven-year-olds were: to learn to like each other, to listen to others' ideas, to be a good sport, to be brave, not to "show off" or hurt others' feelings, to know when to be serious and when not to, to have a good reason for actions, to think and decide for oneself. Eighth graders spoke of finding their real interests, sharing, having good manners, being honest, fair, agreeable, and having wide friendships. The listing was also developed further through written questioning, and finally by group discussion to establish a consensus of goals. The method should be useful for classroom teachers.

Cooperative setting of goals. Some goals are emotionally derived, others rationally. Appealing to the emotions, by exhortation or scolding, through indirect pressure, or identification, is at best partly effective, and at worst potentially dangerous. The teacher need not adopt the tactics of a dictator or of a street gang leader. Setting goals in an arbitrary fashion may also lead to lip service. Since sharpening reason is an objective of the school, the classroom attempts to influence goals in a rational way. Cooperative learning can make a contribution, when the group is involved in setting goals in the classroom systematically and analytically. Group evaluation makes a similar contribution to the development of reasoning abilities.

Where goals are set cooperatively, the motivation to achieve them is greater than when they are set externally. Group discussion and participation or even the possibility of so participating is motivating.³ Group goals more in harmony with individual goals are established and individuals have a fuller understanding of the goals and the advantages in achieving them. The knowledge that others in the group strongly favor a goal may influence a child to accept and work for this objective rather than disappoint his mates.

An eighth grade class held a serious discussion on juvenile delinquency after an incident had shocked both students and teachers. In the discussion, the influence of home, church, school and friends was noted. The importance of manners and their relation to character was debated. A number of students claimed that manners were

² Ruth Cunningham. *Understanding Group Behavior of Boys and Girls*. New York: Bureau of Publications, Teachers College, Columbia University, 1951, p. 64-73.

³ Harold W. Kelley and John W. Thibaut. "Experimental Studies of Group Problem Solving and Process." Gardner Lindzey, editor. *Handbook of Social Psychology*, Vol. II. Reading, Mass.: Addison-Wesley Publishing Co., Inc., 1954. p. 757.

merely external and not indicative of future behavior, while others disagreed. Although full agreement was not reached, the importance of good manners was forcefully presented.

Recognizing need for improvement, the class then offered suggestions on how each member could help himself and others through classroom manners. The students realized that this topic must be treated thoughtfully to avoid resentment and hurt feelings, but their earnest approach and efforts did produce changes in individuals. Even the scoffers whose behavior reflected other standards at home or in the streets, took part. The fear of being considered a "sissy" if well-mannered was somewhat abated. Group study and decision in this initial approach had proved markedly effective.

Cooperative Planning

Cooperative planning may sharpen skills or widen the horizons of learning even within the limits of a fixed course of study. At appropriate times and within limits, children are encouraged to choose what they wish to study. To exercise judgment about choices and the procedures to be followed, their suitability and feasibility, and to weigh values are worthwhile experiences.⁴ With the teacher's guidance, a feeling of group unity and improved interpersonal relations are fostered. Better motivation and understanding of what is required are good beginnings for sincere and lasting learning.

The teacher's role. The teacher indicates the limits of choice *in advance*. Requirements of the school may rule out certain projects. Limits openly announced ahead of time may avoid later use of the teacher's veto power, which might result in disappointment and friction. The teacher cannot impose ideas on the class and still have cooperative planning; nor does joint teacher-pupil planning mean the skillful efforts of the teacher to have his own preconceived notions accepted. If the study does not lend itself to joint planning, that approach should not be used. Children cannot be convinced that they have shared in planning when their part has been merely passive.

On the other hand, the teacher should present his own ideas. After all, he has a great deal to contribute from his experience and maturity. He must not yield the opportunity to broaden horizons, to probe and to provide new opportunities for learning. Cooperative planning

⁴ Alice Miel. *Cooperative Procedures in Learning*. New York: Bureau of Publications, Teachers College, Columbia University, 1952. p. 78. See also Arthur W. Foshay and Kenneth D. Wann, *Children's Social Values: An Action Research Study*, New York: Bureau of Publications, Teachers College, Columbia University, 1954. p. 16.

may be slow, until experience facilitates speed, but rich dividends are possible.

The teacher also keeps ideas "in focus." The discussion is not allowed to wander too far and must have substance. Yet the child must not feel rebuffed when he makes suggestions. Everyone should, if possible, be involved. Suggestions stand the test of acceptance by the group, to emerge as clear and attainable objectives.

Teacher domination. One procedure is to find out what the children would like to learn about the topic. One child serves as recorder, another as chairman as in the neighborhood study. The teacher is still free to add his own suggestions, to help shape the discussion with pertinent questions, and to serve as a resource. If the term "cooperative" is to have meaning, the teacher does not, however, dominate the discussion, although this is a common and understandable pitfall. Perhaps, if the teacher will resolve just once to say *nothing* for a period of time, and then present his impressions as a critique, it may be easier in the future to be a participant and a "cooperator."

Adaptability. Flexibility as the project is developed permits new questions to be added, even a new direction to be taken. Once the questions to be answered have been determined, planning can begin about how they can be answered, what resources are available, and who should do what, individually or in groups. The project can be divided, the class broken into sections and leaders selected for each. The work then goes on to reporting to the entire class, exchanging of committee information, continued planning as needed, and conference with the teacher. As each small group reports, the presentation is followed by a summation, and by analysis, generalization and evaluation.

In general the procedure of cooperative planning just described is illustrated by Mr. Brown's class in the neighborhood study. Their successes with "Africa" had developed a strong feeling of group unity which helped motivate the new study. Mr. Brown undoubtedly felt that the new topic fell within the scope of the curriculum, for he did not set limits in advance. He encouraged ideas of the group and tried to keep these in focus without dominating the group. He added his own ideas and encouraged flexibility by tentative decisions and by suggesting that some matters be left for later decisions. Whether he could have been more effective with his part of the teacher-pupil planning is for the reader to judge.

Cooperative Learning

Cooperative learning is a natural sequel to cooperative planning. A teacher may or may not use cooperative learning consistently. He may use it in part, or only intermittently. When he makes use of cooperative learning, he may lead up to it gradually. Background lessons will be helpful to introduce the topic even in the planning stage. No one can plan or work without some idea of the subject and its significance. The time devoted to introduction, of course, varies. If a class had decided upon a study of rockets, missiles and space travel in 1956, more introductory work would be necessary than if the decision followed the launching of the first satellite. In the latter instance, new dimensions for the study would have been vivid, touching upon military and political problems and international understandings of the role of the United Nations, and comparative educational systems.

When to use groups. How should the work be divided? Who should take the responsibility for carrying out the work? These questions must be answered if the group learning is to have a chance of success. There is no one answer to any of these questions, and experimentation is often the only way to find out. Sometimes, it is best to work individually, at other times in committees and work groups, or a mixture of the two methods. Promising suggestions from the class can be helpful if the teacher does not already have his mind set.

Student government, social activities, sports, assembly programs, visits and trips, school drives lend themselves naturally to group activities. Creative activities including music, the play and the dance are other obvious examples. But the more formal "subject matter" courses within the classroom walls are also adaptable. Group work used in learning about other peoples, for example, not only can increase knowledge of history, geography, literature and language, but also can build skills of living and working together, with far-reaching implications for later life. Communication skills are sharpened through written and oral reports, through the face-to-face give and take, and the side-by-side cooperation of children united for the same goals. Respect for individuals regardless of their differences, developed when acting together, is a valuable outcome. Democracy and even hopes for world peace rest largely upon the results. On the other hand, some subjects are not as well suited for group work. Such manual skills as typing or sewing, tests of knowledge and progress, or practice required to improve individual weaknesses in skills are examples.

Composition of work groups. If children form their own groups, friends may choose each other and sometimes even refuse to work with others. This is especially true of children who have had limited experience in working with others. The group should be composed of individuals who can best respond to the challenge of the problem and of each other. In addition, if tasks and responsibilities are clearly defined, it is not necessary to group friends only. Whatever feelings of aggression are present can be channeled by the group into the work.

Teachers try to influence the composition of work groups so that each group has a range of talent and of backgrounds. Under such circumstances, the group can enhance the security of the individual, can enrich his experience in working with others, can increase his ability to get along with others and can even attract the isolate.⁵ A next step would be to increase contact with other groups within the school and beyond.

The isolate. If the child feels that he is not or cannot become a member of his school group, his behavior may be at variance with the other children's. A small group within the class gives the child a better opportunity to belong and to interact than he could obtain in the larger group. Knowledge of the class enables the teacher to assist this child. Which of the other children in the class show some response to the isolate? Assignment with these individuals, and perhaps taking other students into the teacher's confidence, may help.

The situation must be handled tactfully lest it be aggravated. The lad who is too poor to wear anything but hand-me-downs may quickly withdraw into a shell. His sensitivities, perhaps already stung by unfeeling comments, must be soothed. If he has a special talent, he is given opportunity to develop it. A few words of praise for a contribution he makes may be just what is needed to help him.

The deviate. The youngster who differs markedly from his fellows may also be overlooked or rejected, especially if he differs in characteristics which have high prestige. One of the work groups may be encouraged to recognize the individual especially for the contribution of his difference or for his abilities in other directions. This is not, of course, meant as encouragement for the individual whose deviation is undesirable. Children should learn to respect differences not only in their own classroom but outside. One way to achieve

⁵ Hilda Taba, *Curriculum in Intergroup Relations*, Washington, D. C.: American Council on Education, 1949, p. 13. See also Herbert A. Thelen, *Dynamics of Groups at Work*, Chicago: University of Chicago Press, 1954, p. 62-67.

this is to encourage each individual to make a contribution to the group, and to encourage the group to accept both the contribution and the individual who makes it.

Other problems in grouping. Even the teacher, who constantly observes the group and regularly lives with his class a good part of the day, finds it difficult to understand a group. So, teachers often arrive at different judgments of the make-up, motives and action techniques of the same class, and differ in their reports of happenings in the classroom. In the secondary school, the task is more complex than in the elementary school, since the teacher generally meets several classes a day.

Observing and working with the group is the simplest and most accurate method of assessing it. The sociogram, the Classroom Social Distance Scale, personality tests, and other more or less formal tests are helpful.⁶ The sociogram helps the teacher to plot the friendships and relationships, while the Social Distance Scale indicates the degree of acceptance among individuals. Records of the child, conferences with other teachers and with his parents also furnish significant details.

Whether children work by themselves or with others depends upon the particular assignment, for there is room for both in the class and school. Committees are set up for tasks which can be performed best by small groups. When the job is completed, the committee is dissolved. A boy or girl can be a member of one or more committees. Sometimes the groups are large. But if the job does not lend itself to a group approach, it is not made to fit this mold. A flexible, creative approach geared to the job to be done is best. Even when committees are utilized, work within them may be done individually if efforts are well coordinated.

Responsibility. This brings us back to the earlier question—who is responsible for carrying out the work? Each child, as a member of the entire group, assumes responsibility, with the teacher, for the success of the whole. Whether he is a group leader or group member, he must be helped to realize this. Practice in group planning and group work helps develop a sense of responsibility, both to the group and to the individual.

When specific responsibility is fixed, it must be assigned clearly and distinctly. The planning stage must clearly indicate who is

⁶ For a detailed description of some of these tools, see the appendix of the book by Ruth Cunningham, *op. cit.* This valuable work also illustrates their use in specific instances.

responsible for what, and these details should be recorded and not neglected as the work progresses. During evaluation sessions key questions seek to determine just how well the plans were carried out.⁷ The teacher assists when needed, and takes a more active part where he sees the work is being disrupted. The responsibility remains a joint one.

Affecting group behavior. Cooperative learning also affects classroom control.⁸ Discipline problems often result from inadequate understanding, especially in a novel situation. Through discussion and action, difficulties may be anticipated and embarrassment avoided.

The class is able to establish standards for conduct in specific situations, or to create the climate in which the intent of established regulations can be understood and accepted. Compliance with fire drill regulations is a familiar example. It is not enough to announce that the lines of march will be thus and so, and that absolute silence must be maintained. Discussion in advance is helpful. Children will learn the lessons of safety earlier and better if these lessons are accepted wholeheartedly. The teacher takes advantage of the situation to involve everyone in a responsible way. To add to the effectiveness, the group may practice going through the drill in advance. A child often resents being told what to do, but if he has a part in planning he is more likely to accept the same decision.

Role playing followed by discussion helps to develop behavior standards. Children must learn to understand how another feels. Placing oneself in the other fellow's boots while role playing is a dramatic way to develop consideration for feelings. Role playing also encourages the child to express himself freely, revealing to the teacher otherwise hidden feelings. Group relations may be influenced, for instance, when the prejudiced child assumes the role of the "target" in a planned incident. Or the class "bully" may take on the character of one who is usually teased. In role playing, different ways of dealing with the problem are considered. Afterwards, these approaches are discussed, analyzed, and comparisons are made. The impact is often dramatic.

Cooperative learning situations also reduce the strength of cliques

⁷ Charles M. MacConnell. "Learning To Take Responsibility." *Group Planning in Education*, Association for Supervision and Curriculum Development, a department of the National Education Association. 1945 Yearbook. Washington, D. C.: the Association, 1945, p. 63.

⁸ See especially the discussion by Alice Miel, *op. cit.*, Chapter IV.

or gangs in the classroom. If individuals are grouped differently for a particular task, they may develop new and sometimes more desirable friendships. Regrouping helps when the teacher senses disruptive influences with which the group cannot cope. A project developed with spontaneity and enthusiasm has a better chance for achieving social values and projects involving group decision are often effective in changing social behavior.⁹

Cooperative Evaluation

Cooperative learning in the classroom demands cooperative evaluation.¹⁰ While obvious after the completion of a project, evaluation can go on at any stage. Whenever the question, "How are we doing?" is appropriate, it is time for evaluation. The group looks at its methods of work and progress. The teacher helps by considering also curriculum goals and evidences of interest on the part of the children. Answers to this question must be sincere. When children find that the teacher is susceptible to flattery, honest and constructive evaluation loses ground and morale suffers. When a child's critical remark is rebuffed brusquely, he and others soon learn to praise, to remain silent, or to try to guess what the teacher wants said.

Children like to feel that their honest opinions are welcomed. If they recognize the project as theirs, they want it to succeed, just as they want to succeed themselves. They bubble over in talking about what they did, what they have learned from working together, about what they should do next. The teacher helps by seeing that standards for evaluation are set in a comprehensible, meaningful, reasonable fashion. Evaluation can be made by the group itself; the teacher's task is to develop the skills necessary to evaluate effectively.

Measuring Success

What constitutes success in group functioning? How much learning of information, attitudes and skills is accomplished? How quickly? These are valid questions, but there are others. Is the experience valuable in sharpening group skills? In developing leadership? In helping individuals get along with others? In involving everyone purposefully? In using individual abilities to best advantage?

⁹ Kurt Lewin. "Group Decision and Social Change." Guy E. Swanson, Theodore M. Newcomb and Eugene L. Hartley, editors. *Readings in Social Psychology*. New York: Henry Holt and Company, 1952. p. 473.

¹⁰ See Lucile Lindberg, *The Democratic Classroom: A Guide for Teachers*, New York: Bureau of Publications, Teachers College, Columbia University, 1954, Chapter V.

Participation. Why do some classes succeed in group work while others fail? Cohesion or lack of it may be basic. To what extent does the child feel he is wanted by the group? This is a deeper problem than the lack of interested participation. Foshay's study indicates that the "follow-through" of individuals in the cooperative project is related to the child's acceptance by the group.¹¹ The child who rates low in group acceptance is not apt to take part well, and *vice versa*. As teachers work to improve relationships between children, "follow-through" is likely to improve.

Most children, like adults, are attracted by groups and seek membership in them. The group often helps its members attain goals which would otherwise be impossible to achieve. The activities of the group, in themselves, may be strong attractions, as is obvious in an athletic team or dance club. These activities promise to fulfill such needs as having friends, drawing praise and support for oneself, of gaining respect and admiration of others.¹² The group thus draws out the potential of its members. While the group often is a means to such ends, it may also be an end in itself. Mere membership in the group may bring satisfaction and prestige, for the feeling of belonging is a powerful one.

The child's relation to the group is complicated by the nature of the group and by the child's earlier experiences. Any teacher can recall the boy or girl who is reluctant to take part in group activity, or who interferes with the functioning of the class, or who tries to conceal his own weaknesses by frantic group activity. The group protects some, and influences, even endangers, others through undue pressures. A boy acting in accordance with his gang's code may find himself in conflict with his family and his teacher. Perhaps he will insist on wearing blue jeans and a leather jacket to school because his friends approve of this style.

Participation in group or individual activity means that individual differences must be met. Children have varying speeds of learning. Some will never learn as much as others because of variations in memory, in ability to deal with abstractions, and in drawing generalizations. These differences must be recognized and accepted. If we can help children perform close to their capacity, this is as much as can be expected. In the committee, as in the entire class, we know that contributions will not be equal in value. Instead each is recognized in the light of effort and ability. In assignments, the more able

¹¹ Arthur W. Foshay and Kenneth D. Wann, *op. cit.*, p. 93-94.

¹² Cartwright and Zander, *op. cit.*, p. 88-93.

child is free to go more quickly and dig deeper. This does not mean that the brighter child should do all of the work while others hang on his coat-tails. Responsibility must be given to those whose ability needs to be developed as well as to those who already lead.

This part of the teacher's job is shared with the group leaders in careful preparation and cooperative planning. Provisions are made for oral and written expression, for testing and review, and for evaluation. Stress is placed upon participation in actual situations. If children take part, rather than merely observe, learning is enhanced.

It must be remembered that the skills, knowledge and abilities of effective group participation are learned through experience. To expect a group accustomed to operating under close teacher direction to be miraculously effective in its initial effort with democratic group planning and learning is totally unrealistic. It is just as unrealistic to expect a teacher to be wholly effective when changing to these different methods. Both need to change the rules of the classroom a step at a time before a *Mission Star* or neighborhood study such as those described earlier can be carried out as they were.

Effect of control patterns. Aside from the behavior of individuals, some patterns are dependent upon the structure and climate of the group, resulting from the interaction of its parts. A classic experiment with children's groups describes the effects of three approaches in control.¹³ A *laissez-faire* approach resulted in frustration, wasted time and effort, and aggressive behavior. This group was soon disrupted and never felt the satisfactions of cooperative accomplishments.

At the other extreme, under *autocracy* the leader kept all members busy. In the leader's absence, work slackened because motivation and control depended solely on him. The group members' lack of understanding of the reasons for their work created tenseness, irritation and lack of sociability.

The third phase of the experiment used a *democratic* approach. Increased interest was apparent as everyone was involved and took pleasure in the success of a project. The atmosphere was more pleasant with the leader helping, adding information, and "steering." Group goals were worked out, accepted and fulfilled, and differences among

¹³ Ronald Lippitt and Ralph K. White. "The 'Social Climate' of Children's Groups." Roger O. Barker, Jacob S. Kounin and Herbert F. Wright, editors. *Child Behavior and Development*. New York: McGraw-Hill Book Company, Inc., 1943. For another study see O. H. Mowrer, "Authoritarianism vs. 'Self-Government' . . ." *The Journal of Social Psychology* 10: 121-26; 1939.

individuals were respected. The quantity of work was higher in the autocratic classroom, but this was balanced by other gains in the democratic classroom.

Implications for the teacher. In groups where participation is maximum, where interaction is frequent and not forced, where problems are of interest and significance to the group and within its competence, performances will improve. A democratic pattern distinguished from laissez-faire autocracy stimulates initiative and develops more approaches to be tested. Results will not be achieved as quickly, but generally culminate in better solutions. This stems in part from specialization of each individual's activity and from a better chance to spot errors since more people are involved. The group solution is not invariably superior but is more likely to result in positive influences on growth and retention.

The teacher may be perplexed as to these exact meanings. Laissez-faire has never had a stronghold in the American schoolroom, and authoritarianism through the years is being replaced by democratic processes. Confusion is still possible when the teacher hesitates to interfere for fear of being considered an autocrat. A proper balance can never be defined for every situation, but the teacher must sometimes step in to protect individual or group safety. Before this point he sets limits for behavior, or works with the group to set these limits and to develop understanding of them. Never can he withdraw to the role of observer or arbiter alone. These functions are his, but his best role is that of an active and experienced group member who sometimes leads but seldom dominates. Clue to this balance is discovered by study of the teacher's participation. Other schools have delegated certain phases of school discipline and conduct. A student court with careful adult guidance may have authority for dealing with certain "offenses."

In these all-school activities as many children as possible should be involved to utilize the talents of all. Continued and varied practice in such situations improves social relationships, strengthens the feeling of unity within the school group and members of many subgroups develop new bonds of friendship and new skills in working together.¹⁴

For youth, the opportunity to take part as well as to observe is even more important outside of the school. Techniques of participation and rules of behavior are learned better when practiced in real situations. Community service is appealing to youth and offers excellent educational opportunities. Today's youth can be encouraged to take

¹⁴ Hilda Taba, *op. cit.*, p. 108.

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part in a community clean-up campaign, in a study of juvenile delinquency, in local YMCA, YWCA or community center activities. Young people welcome the chance to be consulted, to feel that their opinions carry weight, especially with adult groups. Young people want to accept adult goals and to be treated as adults, but if these goals are inadequate and warped, theirs too will be misdirected. Guidance enables young people to learn the skills of citizenship through participation in socially desirable activities.

Conformity and Individuality

Teachers learn a great deal about each individual as they work cooperatively. Individuals who need assistance are discovered through observation in a variety of activities. Individual needs may be met through group activities which earn respect for the child's contributions, help the child to belong, or assist in overcoming a personal weakness. Working with the group can enable each individual to develop his potential more fully.

There is no real conflict between group activity and individual development. Where group work is conducted properly, the individual is free to make his own contribution and to develop his own potential. This is true for the gifted child as well as the slow learner. The need to belong and the need to develop individuality are compatible ideas when group forces are utilized most effectively in the classroom.

Is adjustment to group living the most important goal within or beyond the classroom? Despite the emphasis on group living in this chapter, "The Teacher Utilizes Group Forces," this impression should not be left with the reader. Adjustment as an objective is laudable in many ways, but not if it overshadows other objectives. The chapter has touched on how the person functions as an individual and as a member of a group. Both roles are vital and essential for mankind's advance in individual or international relations, and in such varied fields as science or morals. Riesman fervently pleads, "We must give every encouragement to people to develop their private selves—to escape from groupism—while realizing that, in many cases, they will use their freedom for unattractive or 'idle' ways."¹⁵

In the classroom, the teacher often notes that the leader is chosen because of popularity. If the job requires ability, possibly the very skills possessed by the nonconformist, there is danger in an erroneous

¹⁵ David Riesman. *Individualism Reconsidered and Other Essays*. Glencoe, Ill.: The Free Press, 1954. p. 37.

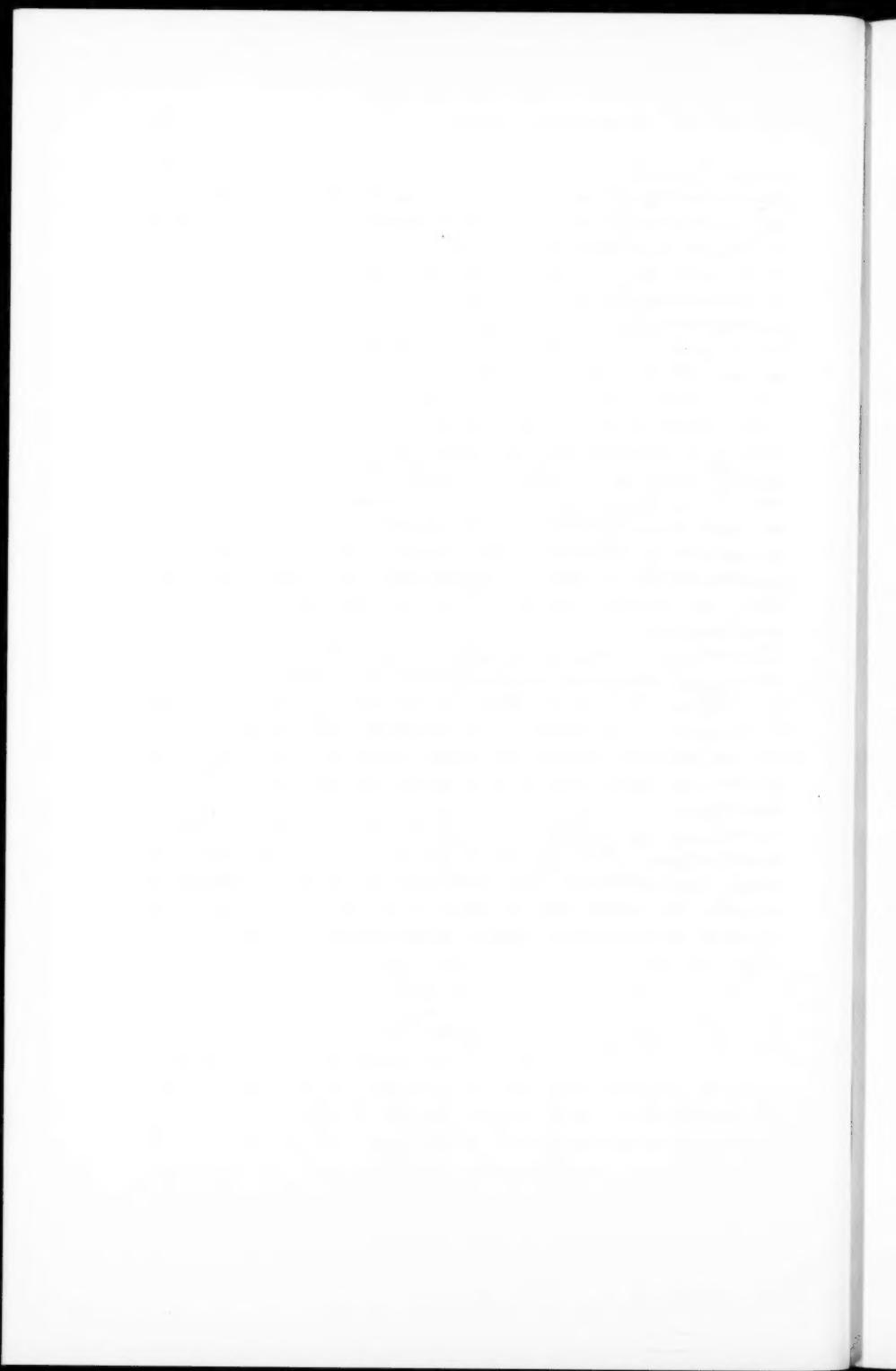
choice. The parallel in the adult world is of vastly deeper significance. Does leadership tend to mediocrity as a result of placing the premium upon acceptability? This places great importance on the function of the teacher in working with groups.

Conformity may be insisted upon by the group in everyday life in the school. Emphasis on uniformity may be sought to give the group the strength required for its purposes. Pressure is placed on its members to act alike, to think alike. The pressure is effective because of the attraction of one's fellows, the fear of ridicule or even rejection, and the unwillingness to endure being considered "different." If the child conforms in general, but not in those aspects which make for "status," he still risks rejection by his mates. If, on the other hand, the child conforms in what is considered vital in achieving group goals, less significant deviations may be forgiven. Again, the carry-over into the adult world, and the significance of the teacher's role are apparent. If adjustment merely means conformity, or docile acceptance without question or understanding, there are serious drawbacks, even dangers. This way to the sanctification of the state, to dictatorship!

From another viewpoint, brilliance in the individual in practice is not especially paired with conformity in the individual. Recent surveys have disclosed that school children have tended to consider scientists as queer, as a peculiar species of "odd-ball." What ultimate effects this may have on a basic key to national survival are not yet apparent, but remedial efforts have already been hasty and vocal, albeit un-coordinated.

Conformity and individuality—each has its place. Schools provide the opportunity for development of both features, and the experiences for the development of each child. It is the teacher's function to recognize the proper balance between the child's need to belong to various groups and his need to grow as an individual.

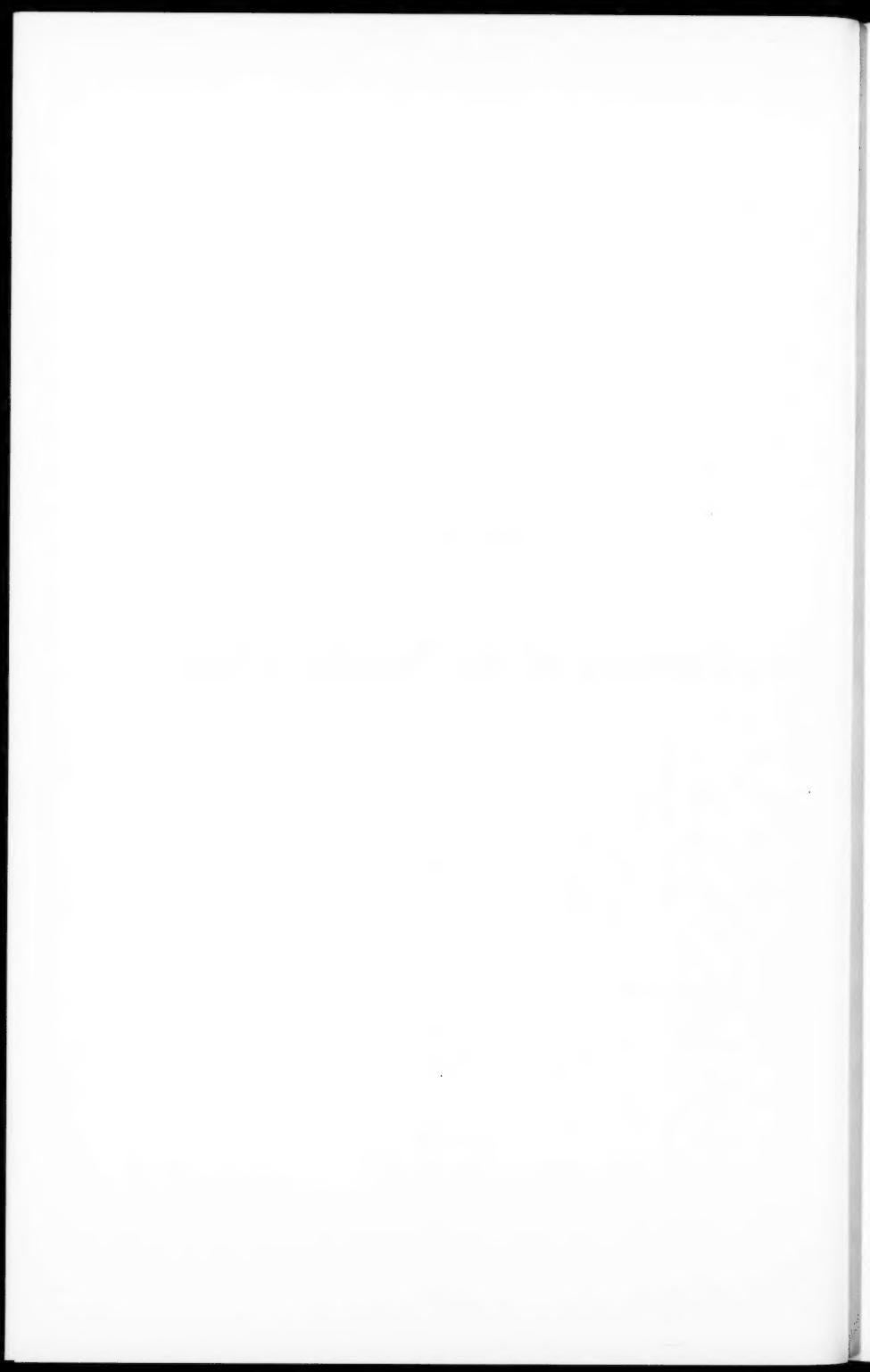
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CHAPTER EIGHT

Helping Children Learn How to Learn

Guy T. Buswell

THE PHRASE "learn how to learn" is being heard more and more often. To avoid becoming simply another cliché, such a phrase must be used with a full appreciation of its meaning. All too often phrases which were originally useful and full of meaning have become sterile. The statement that "education should be like life" was first used in vigorous reaction against the formalism then characteristic of many classrooms. This purpose was defeated by thoughtless repetition. Schools must of course be *more* effective than life so that children will acquire in a few years what they could not in a hundred years of just "life."

Likewise, the statement "teach the child, not the subject" was originally a useful slogan aimed to correct an overemphasis upon school subjects rather than upon understanding the nature of the learner. However, many people seem never to realize that one cannot teach a child without teaching him something. Instead of correcting an unbalanced situation, the balance in some instances was thrown to the other extreme, neglecting the content to be learned and provoking frequent criticisms of the curriculum.

A child "learns how to learn" only by learning *something*. The selection of curriculum content to be learned may be the key to the kind of competence that the child acquires. An essential outcome of education is a body of knowledge (which is more than facts). Some knowledge is important in itself and some is important because it develops independence in acquiring further education. Methods,

techniques and processes of learning are acquired through the content taught in school. This second value, designated here as learning how to learn, is our present concern. This "something" which good education gives to a child in addition to the substantive content taught is acquired only through the learning of content. The value of education resides not alone in the knowledge which has been acquired but, even more, in the skills which give students independence in expanding further their knowledge and understanding.

Basic Skills for Learning

Learning how to learn applies to all of the school. The elementary grades play a significant role in providing the basic skills for independence in learning. For example, when the school teaches a child to read, his ability to learn is immeasurably enlarged since reading, more than any other skill, is the key to the rich storehouse of human experience. Although most of the knowledge the human race has learned is available to the person who can read, many people still read very little. Some schools teach reading simply as a school subject whereas other schools teach it as a tool for further learning. In the former, the curriculum is thought of as a textbook plus a few supplementary readings contrasted with a curriculum that is rich in possibilities for wide and functional reading. This difference may be seen in many ways. Oral reading may be a dull exercise in reading from a textbook what the other children have already read. Or it may be reading something new and of interest to the class as a real audience. Children may learn to use libraries, encyclopedias and many other reference books. A genuinely functional program in reading excites children's curiosity so that they search for needed information in a wide variety of sources. Interests are developed which can be satisfied only through other literature extending the reading begun in class. As pupils learn to read with greater competence they find that skill in reading is a most useful tool in learning whatever they wish to learn. The discovery that reading is a useful tool for further learning is an important outcome of education.

The language arts contribute in many ways to learning how to learn. One may learn to listen casually or with discrimination, to write and speak carelessly or with a precision and richness that makes communication effective. One may develop a distaste for literature through school selections that are trivial and dull, and this too is learning. Or one can acquire a liking for reading literature that is

classic in enduring values for the maturity of the children who read it. The concept of learning how to learn also applies to the ways of learning the various languages arts. Pupils may be helped to learn that reading is not just saying words orally or subvocally, but rather is deriving meaning from the printed symbols on a page. They may be helped by learning that the commonest 300 words in our language make up some 75 percent of the words in ordinary reading and that by learning thoroughly these 300 words they will know, on the average, three words of every four that they encounter. They may learn how to study harder words in spelling class so they will have less trouble in writing them.

Arithmetic can also contribute heavily to learning how to learn. Persons who lack arithmetical skills are blocked whenever encountering situations demanding computation or quantitative understanding. The quantitative thinking required in reading the daily newspaper is beyond the arithmetical ability of many who have not developed adequate concepts of number and of the social uses of arithmetic. In the school itself, arithmetic facilitates many learnings. Percentages in the social studies become more meaningful to pupils who are skilled in arithmetic, experiments in the science class require number manipulations, and the vocational subjects require many kinds of measurements. A mastery of arithmetic helps one to learn in many different fields.

The Three R's are not something to depart from or go back to according to the temper of the times. In the long history of the human race they have come to have perennial value, as the skills through which learning is transmitted from generation to generation. The culture of any generation rests on the accumulated heritage of the past. Language, number, music and other bodies of knowledge are the results of cooperation of men throughout the ages. The whole strategy of education is based on the preservation of these learnings so that each new generation may begin where the last one stopped. While the Three R's, and modern additions, have value in their own right, their main value educationally is that, through such skills, children are enabled to learn how to learn the things that they find important in their lives.

Content and Methods

The expansion of knowledge during the past hundred years has complicated the problems of education in respect to the total load of

learning and the kinds of content to be learned. While there has been no biological increase in capacity to learn, the amount to be learned has increased greatly. The resulting decisions forced on the school have too often been made according to expediency rather than to sound principles of education. The elementary school has been less affected than the high school. Parts of its content have changed scarcely at all. The number system is precisely what it was a century ago. Handwriting still deals with the same 26 letters. The spelling vocabulary has changed but little. The reading curricula are selected from larger literature, and the social studies and science programs have been expanded. However, the high school and the junior college have felt the full effects of the expansion of knowledge. How can the school deal with this ever increasing body of knowledge? The accelerated rate of increase is forcing the school to restudy its strategy.

The psychology of transfer of training applies both to the content to be learned and to the methods of learning it. The desired outcome is a carry-over of what is learned to areas wider than those in which the original learning occurred. Learning that is very specific is of less value than learning of general principles or general methods because the specific learning applies only to situations that are identical. Two illustrations may be given, one that applies to content that is learned and one that applies to methods of learning.

A pupil may learn in arithmetic that if he divides the circumference of a silver dollar by the number 3.1416, the quotient will be the diameter of the dollar. If he remembers this he will always know how to find the diameter of a dollar if he knows its circumference, but this would be a rather useless bit of knowledge. Learning this as a fact specific to dollars, may not help him when he wishes to find the diameter of other circular objects as, for example, a large oil tank. He may, in such a case, run a string around the tank and then measure the length of the string to get the circumference, but he is likely to wonder what number would be proper to use as a divisor when the object is immensely larger than a silver dollar.

With the background of only one specific learning, he might assume that since the tank is so much larger than the dollar, the number used as a divisor should be much larger too. However, if the original learning had been extended to circular objects of many kinds and sizes he would have learned that always, no matter the size or kind, the diameter of any circle can be found by dividing its circumference by 3.1416. When he learns that this is π (π) and that this relation-

ship for any circle can be expressed as $d = \frac{c}{\pi}$, he has grasped a general fact transferable to any problem in which the diameter is to be found from the circumference. If the teacher has imagination and stimulates the intellectual curiosity of pupils, by the next day many of them may be reporting the thickness of trees in their home yards. The essential distinction is between learning the specific fact that the diameter of a dollar may be found by dividing its circumference by 3.1416 and learning the general fact that the diameter of any circle may be found by dividing its circumference by this number.

In the same manner, when a person learns to transfer general methods or techniques of work, he has learned something which may be used in continuing other learnings. The ability to solve problems is a highly regarded outcome of education. One may learn to solve specific problems for the sole purpose of getting the answers. Yet through solving problems one may also acquire general methods of thinking that will transfer to the solution of many other problems. Much remains to be learned about problem solving, but some general habits of problem solving can be identified. For example, it is a good method to define the problem explicitly so that the outcome sought can be stated precisely. It is good method to read the problem carefully so that relevant and irrelevant facts can be separated and so that needed facts can be obtained in advance. It is useful to estimate the answer or the conditions which an answer must fit before proceeding with the solution. It is known that good problem solvers withhold judgment until all pertinent hypotheses have been examined. These and other methods have been suggested by research in problem solving.

The school, therefore, extends concern about students solving particular problems to concern about the techniques applicable to the solving of any problems. Learning good methods of problem solving is a major step toward learning how to learn to solve other problems in new experiences.

Two conditions are basic in learning how to learn. First, the content or method to be transferred (such as $d = \frac{c}{\pi}$, or how to solve problems) must be learned thoroughly and concretely; and second, there must be applications in a sufficient number of situations to make clear that the content or method is general and can apply to any similar situations. Both conditions must be met if transfer is effective. The school must teach students so that they learn necessary knowledge and skills. It must also go further and see that pupils learn that the

methods used in learning may also be applied to many other things not included in school.

Research on human learning indicates that in learning how to learn (a) the information or skill to be transferred must be encountered in several situations, but (b) thorough learning in a few situations is superior to more superficial learning in a greater number of situations. This research has significant implications for the curriculum.

The most promising way to meet the impact on the curriculum of ever expanding knowledge is to apply to the selection of content to be learned the concept of learning how to learn. Formerly schools adjusted to the expanding body of knowledge by adding new courses or new subjects. Since no one student could learn all that was offered, the elective system was adopted. The burden of deciding what to study was transferred from the teachers to the students. At first required subjects outnumbered electives but now generally the elective courses outnumbered the required. The results of the elective system in some cases are difficult to defend. Schools are aware of the dilemma as they try to help students select from the vast accumulation of courses those that are essential.

The elective system as now practiced often leaves many gaps in the student's knowledge at the end of high school or college. In the United States thousands of students leave high school with no mathematics beyond elementary school arithmetic. Others have studied no physical science, or no foreign language, or no fine arts. The total curriculum offers a bit of everything but an individual student cannot cover all of it. Rather, he has elected only a limited number of courses. In place of poorly planned student selections now common there might be substituted a selection of content planned according to the best educational strategy of the profession.

The guiding principle is that the school must enable students to learn how to learn so that they will be independent and versatile in learning whatever needs to be learned. Such a program means first that the basic skills for acquiring knowledge be learned very thoroughly so that they function in all subsequent learning, in school and out. Basic learnings now customarily taught in the elementary school would be common to all children. Reading, writing, spelling, number and other content would be emphasized as learnings to function in further learning and not as static "school subjects." Beyond these basic learnings, the curriculum of the high school and college would be flexible and selective, resulting from intelligent planning rather than from undirected student choices. One learns how to

learn only by learning some kind of content, but a carefully selected group of "contents" will produce outcomes very different from just any combination of content.

Attempts to *cover* all knowledge will have to give way to one which *samples*, because accumulated knowledge has become too great to be covered in any one person's education. For example, history has an almost unlimited body of content which no one can hope to learn in its entirety. How much and what should be learned in school as part of a liberal, not a specialized, education? The answer will be determined through experimental study by those competent in the field. But at some point the student should be able to say, "Now I have learned the history of certain segments of human experience. In so doing I have also learned how to learn history. While there are vast areas of history that I do not know, I have learned how to learn them independently as needed." How does one learn history? Obviously, one needs to know how to read effectively to begin. Beyond this, teachers will be concerned that the student learn the substantive content of history and also that he learn how historical truth is discovered, the nature of historical criticism and evaluation, and the sources from which the account in textbooks may be enriched. If the teacher also arouses the learner's intellectual curiosity and encourages free use of the library, the outcome is not only a body of historical knowledge (not to be evaluated lightly) but, in addition, knowledge of how to learn more of history that may begin to function while the student is still in school. The great bulk of one's learning should be in adulthood—the extension of school learning throughout life. Independence in continuing learning is the goal of the school. Learning that stops at graduation is static. Only those who have learned how to learn can be independent and versatile in keeping up with a changing world.

The illustration from history could be duplicated in each of the other major curricula. In foreign languages it is not too important which of several languages is studied. From mastery of French the student learns not only how to read and speak the language but how to proceed when he finds it desirable to learn another language, if the learning of how languages are learned has been emphasized. Too often foreign language is taught as though the only purpose is to master that particular language. But it can be taught as a sample of language in general, in which some comparative study contributes to the student's understanding of the nature of languages and how one should proceed in learning a new language. A strong case can

be made for learning one or two foreign languages thoroughly rather than superficially as is now customary. Experimental evidence has shown that the usual two year program is not enough for reaching fluency in reading and speaking the language. With world relations as they will be in the years ahead, graduates of high school or college should have confidence in their ability to learn a new foreign language. The outcome of foreign language study should enable the student to say, "I have now learned thoroughly one foreign language and I have also learned how to learn another one if the occasion should arise."

The objective of education is always double: first, a thorough learning of the content, and second, learning how to learn so that school learnings may be multiplied throughout life. For this reason departments of education insist that teachers not only be prepared thoroughly in the subject content but that they be equally competent in the psychology of learning. Teachers can then help students learn how to learn independently as well as the substantive content taught. This strategy of the school, known as transfer of training, is concerned both with content and the techniques of learning through which experience is generalized.

Learning How To Learn

The remainder of this chapter illustrates three ways in which the school may help the student to learn how to learn.

1. *Learning to use a library.* Although students may learn a great deal from concrete experiences in the community, the sources available in any community are trivial in comparison with those of a good library. While of undoubted value, field trips and field study are in no sense substitutes for a library. A good library affords contact with knowledge that is much broader than that afforded by concrete experience. Learning to use a library is one of the powerful ways to increase one's ability to learn. This is more than simply learning the classification system by which a book can be located by finding its number in the card index. Pupils must have an opportunity to learn the kinds of resources that are available in a library.

Many college students are unskilled in using a library, particularly when the objective is to locate primary evidence as contrasted to secondary references. Bibliographical knowledge is too often limited to familiarity with the *Readers Guide*. Too often students depend upon the library assistant to find material and are not familiar with the aids afforded by standard dictionaries and encyclopedias. Few

have browsed enough in a library to discover the wealth of fugitive material that most libraries contain. Skill in using a library is one of the most effective ways to learn how to learn, for when schools and teachers are no longer available, the adult finds the library his main tool for continued learning. A section on the use of the library in an English course is better than no help but is no substitute for the continuous use of the school library in subject after subject for a variety of purposes.

American schools have become so accustomed to relying on textbooks that many students get little experience in an independent search for knowledge. The fact that textbooks have become so effective in organizing and presenting knowledge may contribute to a degree to the student's helplessness in learning how to learn without these highly developed aids. In life, however, one encounters the need for learning where textbook aids are not yet developed. Overuse of textbooks works against independence in learning. They present the results of a previous search for knowledge; they must be supplemented by other tools if the student is to experience what is involved in learning what has not yet been reduced to systematic organization. Learning to use a library provides a tool for learning which goes beyond any textbook.

2. *Geometry as a method of thinking.* Plane geometry may be taught as a school subject from which a student learns the proof for a given number of theorems. Similar situations are seldom encountered in life and consequently the end result is a body of static knowledge soon to be forgotten. On the other hand, geometry may be taught using the same theorems to result in a way of thinking that will function in a great variety of learnings.

Psychologically, geometry is a system of deductive thinking in which space forms show how logic is used in solving problems. The deductive geometry of the high school differs from the inductive geometry of the upper elementary grades. The former involves criteria of internal consistency of thinking, whereas in the elementary grades the criteria are based on objective measurement. The elementary school child finds that when two parallel lines are cut by a transversal the alternate angles are equal by measuring the angles with a protractor. The geometry teacher in high school throws out this kind of "evidence" and requires "proof" that the angles are equal. By proof he means beginning with certain self-evident truths, axioms, and by deductive reasoning alone finally arriving at the logical conclusion that the alternate angles are equal. The value of geometry

is not in the facts about lines and angles but in learning a deductive method of thinking as a tool for solving problems where known principles exist. Value resides in a method of thinking rather than in the substantive lines and angles that are employed. Many teachers of geometry sense this and teach the subject as a course in methods of proof, assuring transfer by bringing into the class non-geometric materials to illustrate how the deductive reasoning of geometry applies.

One of the most valuable tools for learning is a knowledge of the methods and pitfalls of logical thinking. Geometry taught as a body of static subject matter contributes little to the student's ability to carry on further learning. If taught so that students learn the method of deductive thinking few subjects can make a greater contribution to learning how to learn. The confusion of established principles and unsupported hypotheses is so common that the need for learning how to think logically is abundantly apparent.

3. *Personal-social relations.* The concept of learning how to learn applies to personal-social adjustment as well as to academic learning. Characteristics which condition personal-social relationships are learned just as are reading, arithmetic or chemistry. In either case the results may be stereotyped behavior and static knowledge, or with wiser teaching, generalized habits and transferable knowledge which will function in further learning. One method of facilitating interpersonal relationships is the study of an etiquette book to learn specific social behaviors. From such a source one might learn which fork to use first, what to say when introduced to a person, or how to dress for a formal dinner. But this kind of learning does not provide the flexibility and versatility that are needed for situations different from those in the book. One does not learn how to behave in a new situation.

On the other hand, good manners may be thought of as behavior governed by the desire to be kind, to be gracious, to behave as fits the spirit of the occasion. On occasion the behavior which is right according to the etiquette book is wrong according to the spirit of kindness. The problem then is, whether the school can teach for personal-social relations not through stereotyped behaviors but through showing how to respond appropriately in new social situations. The behavior of tourists often tests this kind of education. Has the tourist learned while in school a versatility in social relationships that enables him to learn quickly the acceptable behaviors in a strange land? Static forms of social education result in rigidity of

behavior which makes adjustment to a different environment difficult or impossible. A different kind of social education enables a person to learn behaviors appropriate to a strange environment and to establish friendly relations with strangers. Some of our difficult international relations may at heart be due to a rigid personal-social education that stereotypes the behavior of students while they are still in school.

This chapter might be summarized as follows: The expansion of knowledge has reached such proportions that any attempt by the school to cover all of it is hopeless. The elective system as a stopgap remedy certainly has its limitations. The obligation of sound planning by the teaching staff cannot be transferred to immature students. Attempts to cover more and more content necessarily result in superficial learning.

The hypotheses of this chapter are: First, that the chief objective of education should be independence and versatility in learning; that education should not cease on graduation day; and that through learning how to learn the school should offer the possibility of independent life-long learning. Second, that this kind of learning is conditioned on (a) mastery of the basic tools of learning, and (b) learning of a representative body of content selected for its own importance and its value in providing experiences in the principal varieties of learning. Mastery of the basic tools and methods of learning gained through study of carefully planned bodies of content would result in greater versatility and independence in learning than is likely to result from the all-too-common practice of selecting a set of school subjects in part by the school and in part by the student without any coherent plan or purpose. This does not imply a rigid, single program for all learners. Rather, it implies a group of coherent programs adapted to the differing abilities and differing objectives of students. Coherent programs planned by the most competent educators available rather than individual courses would be selected. But above this, the purpose of seeing that the student learns how to learn in addition to learning the substance of whatever is taught would be stressed. Beyond the basic tools, learning how to learn may prove to be a greater asset for continued education than is the content through which these intellectual habits are learned.

Finding Out More from Research Sources

David H. Russell

MRS. KIRK, a supervisor for the county schools is visiting Mr. James' sixth grade class at his request. Mr. James is generally considered a good teacher, yet he is dissatisfied with himself and his class in this his third year of teaching.

A Supervisor Points to Published Materials

Because Mr. James is scholarly and even a little "bookish" in his interests, Mrs. Kirk draws on research by mentioning published literature in their discussion after the children have left.

Discussion

Mr. James: Well, Mrs. Kirk, you have seen me and my class for the last hour and a half. I don't think it was too good, do you?

Mrs. Kirk: You are a good teacher, George, and your work showed evidence of careful planning. I like the way you introduced reading with pictures readily available. Having the library books right there at your desk when you finished with the group was a good idea.

Mr. James: I did some planning all right but I don't think the children were really interested. I can't seem to stir up much enthusiasm for reading or, for that matter, for other school work.

Analysis

The old rule of opening with positive points.

Teacher attempts to get at cause of difficulty.

Mrs. Kirk: I wonder if you could have relied on the children more? Could they have brought some of the pictures or gone to the library for other story books?

Mr. James: I've tried that but it doesn't work very well. I guess it's a question of motivation—that's the word we used in college courses on teaching.

Mrs. Kirk: You have a good college background. The trouble with a word like motivation is to pin it down. When you were in college did you ever read a yearbook on *Learning and Instruction* published by the National Society for the Study of Education?

Mr. James: I don't think so.

Mrs. Kirk: There's a good chapter by Hilgard on the teacher's role in motivation in the book. He talks about motivation being from within but suggests that children's internal and external rewards can be much the same thing. I think you would enjoy thinking about the ideas in it.

Mr. James: Yes, I'd like to see it.

Mrs. Kirk: I'll see that it comes to your school on the next delivery from our library. Would you like anything else?

Mr. James: Yes, if you have it.

Mrs. Kirk: Some of your children may be uninterested because the school work is not related to their other interests—their TV, their sports, their ambitions. Have you thought about these?

Mr. James: I guess I'm inclined to think of lessons that must be taught or books that must be covered. What do you suggest?

Mrs. Kirk: Jersild's book on *Children's Interests and What They Suggest for Education* gives some suggestions for studying pupils' interests. I'll send that too. What would you think of working on some kind of interest inventory in your own class, especially since we're all worrying about children's TV habits these days?

Mr. James: I remember reading about interest inventories. I'll look up what I have in

Supervisor tries to involve the children, including them more in the learning situation.

"Motivation" is mentioned.

Supervisor refers to specific available sources.

Something definite on motivation.

Another look at motivation.

Suggestions for reading plus some action research.

one of my own books. I'd like to try something along these lines.

Mrs. Kirk: Of course, we want to go beyond TV to other possible interests. Call me if I can help you. When you have a start on these two, the Hilgard chapter and the inventory, we can find some others. I hope you'll show me the results of the inventory because other teachers might like to use it too.

A chance for leadership?

Teachers Can Use Research Publications

In the preceding example the supervisor suggests a few sources of help to a teacher who is interested in learning. This chapter describes how teacher, supervisor and principal can find out more about learning from the published literature on the topic. Part II of the yearbook describes the varied phases of a teacher's work to illustrate learning situations in classrooms and to derive certain concepts about learning in functional terms. The other two chapters of Part III show how teachers can learn about learning through the unifying idea of children learning how to learn and through participating in action research. The present chapter, accordingly, attempts to give a balance to professional activities in developing more understanding about learning. It assumes that classroom experience and action research projects should be combined with the reading of research and theory in making applications to one's own teaching.

Teachers, of course, differ widely in their interest in the psychology of learning, in their ability to translate "book learning" into classroom practice, and in the time and energy which they have available for such work. Not all teachers learn from books and research reports as much as they learn from specific demonstrations of classroom materials and practices. In these days of economic stress, when second jobs and "moonlighting" or his own family make insistent demands upon a teacher's time and energies, not all teachers can give hours of their "own time" to the study of learning.

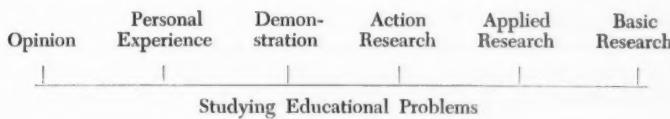
Most teachers, however, do have the energy, ambition, and some time to improve their own work. Such people may be helped by knowing about professional books and research sources telling about learning. Those in leadership roles also can perform valuable services to teachers and to parents if they know research such as that described below and can interpret its significance to others. Most school people

want to know more about learning—what happens when children learn? What materials and methods make for efficient learning? How can different learnings in skills, attitudes and understandings be introduced, guided and reinforced? Research literature accumulated by hundreds of workers over the past 60 years, increased insight, analysis of classroom experiences, and participation in action research, all help to answer these questions.

Place of Research on Learning in Educational Practice

Sometimes the research on learning does not seem to have much impact upon practices in the classroom. What goes on in school in any one day depends upon the particular children and teachers involved and upon such other influences as local traditions, the staff's philosophy of education, community pressures and the materials which are available. All these factors affect a third grade or tenth grade program any day of the week—perhaps more than research does.

Current public debates on education neglect research evidence even more. Praise of European education, stress upon science or mathematics or a foreign language, and pressure for a "tough" school program are often made on the basis of opinion without regard for scientific evidence about learning. Educational and psychological research on learning still has far to go but unfortunately few people are using the evidence now at hand. Teachers with meager professional background also may attempt to settle problems in the light of opinion or personal experience without regard for evidence from a careful research study of many months or years. A continuum of approaches to solving educational problems, whether of learning in one classroom or of education in the nation, may be charted as follows:



These categories of course overlap and none of the approaches is undesirable, because even opinion and debate about education are useful. A combination of methods can usually be used to advantage. However, as a basis for important decisions, the opinion and personal experience categories are not good enough. In a national educational program costing billions annually, an individual's personal whim or

limited experience cannot be permitted to determine procedures. In the same way a school year in the lives of 30 boys and girls cannot be directed solely by one teacher's opinions, however well meant. Teachers must know and use the best evidence about learning and development available even though it is sometimes incomplete. Knowledge of research will prevent a school staff from panicking when a newspaper editorial derides children's spelling ability. It will help teachers reject the either-or arguments of knowledge versus "life adjustment," thinking versus socialization, understanding children versus mastery of subject matter, or whatever two-category curriculum goal or dilemma is proposed. Teachers are able to draw from a considerable store of research tested by scientific procedures and marked by the logic, order and truth which come with careful study and report. This chapter deals with ways of unlocking and using these stores of accumulated and accumulating knowledge about learning.

Research on learning in two broad areas is presented below. The first section presents short excerpts illustrating learning theory as conceived and presented by leading psychologists, most of whom are currently adding to knowledge in this field. The excerpts do not go back to such early and classic experiments as those of James, Thorndike and Pavlov. Nor is a systematic view presented of the theories or principles of learning developed by such later writers as Hull, Wheeler, Lewin and Tolman. Instead a few sample statements about learning from recent writers are presented to encourage readers to dig further into the references given in Appendix B.

The second section dealing with research on learning is concerned with different curricular areas such as the Three R's, the social studies, science and mathematics. Research in different school subjects has been collected by Beck, by Cole, and by Hunnicutt and Iverson (see references) but more is summarized in smaller publications dealing with one or two specific aspects of the curriculum. These include such items as the Glennon and the Shane bibliographies published by the Association for Supervision and Curriculum Development, NEA; the various volumes of the *Review of Educational Research*; and the pamphlet series of "What Research Says to the Teacher," published jointly by the Department of Classroom Teachers and the American Educational Research Association (Trow, Appendix B). These are, of course, secondary and abbreviated sources. For a full understanding the teacher specially concerned with a topic should also go to some primary sources and read the actual account of the experimentation mentioned in the various books and bulletins. The second section

does not give an exhaustive list of sources; rather, it mentions some of the implications of curriculum research for understanding the learning process.

Representative Views about Learning

One of the best recent summaries of various views about learning is Hilgard's *Theories of Learning*. After examining the work and conclusions of such different psychologists as Hull, Guthrie and Lewin, Hilgard shows the relationships and agreements in their views. The following excerpt from his book shows how several theories of learning may be reconciled, at least in part.

Here are a few statements upon which I would expect a majority of learning theorists to agree. It would be too much to ask for perfect agreement, for some statements require many qualifications, and there are always a few theorists who are sticklers for wording.

In deciding who should learn what, the capacities of the learner are very important. Brighter people can learn things less bright ones cannot learn; in general, older children can learn more readily than younger ones; the decline in ability with age, in the adult years, depends upon what it is that is being learned.

A motivated learner acquires what he learns more readily than one who is not motivated. The relevant motives include both general and specific ones, for example, desire to learn, need for achievement (general), desire for a certain reward or to avoid a threatened punishment (specific).

Motivation that is too intense (especially pain, fear, anxiety) may be accompanied by distracting emotional states, so that excessive motivation may be less effective than moderate motivation for learning some kinds of tasks, especially those involving difficult discriminations.

Learning under the control of reward is usually preferable to learning under the control of punishment. Correspondingly, learning motivated by success is preferable to learning motivated by failure. Even though the theoretical issue is still unresolved, the practical outcome must take into account the social by-products, which tend to be more favorable under reward than under punishment.

Learning under intrinsic motivation is preferable to learning under extrinsic motivation.

Tolerance for failure is best taught through providing a backlog of success that compensates for experienced failure.

Individuals need practice in setting realistic goals for themselves, goals neither so low as to elicit little effort nor so high as to foreordain to failure. Realistic goal-setting leads to more satisfactory improvement than unrealistic goal-setting.

The personal history of the individual, for example, his reaction to

authority, may hamper or enhance his ability to learn from a given teacher.

Active participation by a learner is preferable to passive reception when learning, for example, from a lecture or a motion picture.

Meaningful materials and meaningful tasks are learned more readily than nonsense materials and more readily than tasks not understood by the learner.

There is no substitute for repetitive practice in the overlearning of skills (for instance, the performance of a concert pianist), or in the memorization of unrelated facts that have to be automatized.

Information about the nature of a good performance, knowledge of his own mistakes, and knowledge of successful results, aid learning.

Transfer to new tasks will be better if, in learning, the learner can discover relationships himself, and if he has experience during learning of applying the principles within a variety of tasks.

Spaced or distributed recalls are advantageous in fixing material that is to be long retained.

These points are neither systematic nor comprehensive. They are listed merely in order to add concreteness to the suggestion that there are a number of useful generalizations about which students of learning are in substantial agreement.¹

Most teachers are acquainted with association theories of learning and know such phrases as "conditioning," "S-R bond," and "connectionism." In the first third of this century the psychologist who influenced schools more than any other was E. L. Thorndike, whose name is associated with these theories and such "laws of learning" as "exercise" and "effect." Although many psychologists would not accept these statements as "laws of learning" today, the influence of Thorndike and a long line of association psychologists is felt in most theories of learning. This influence is perhaps least apparent in the work of the Gestalt psychologists. Some of this group and especially Kurt Lewin, developed other theories to explain behavior in terms of the way the learner interprets his surroundings.

In his field theory, Lewin emphasizes that learning takes place in a given environmental setting and the "field" includes both this setting and the dynamic organism, the learner. Learning and development depend upon the interdependent states of the person and his environment. Lewin refers to the total environment as a person's *life space*. The teacher must know something about the learner's life space as the learner sees it and this involves three concepts: (a) *force*, (b) *psychological position* and (c) *potency or direction*.

¹E. R. Hilgard. *Theories of Learning*. Second edition. New York: Copyright 1956, Appleton-Century-Crofts, Inc. (By permission of the publishers.)

In summary, one can say that behavior and development depend upon the state of the person and his environment, $B = F(P,E)$. In this equation the person P and his environment E have to be viewed as variables which are mutually dependent upon each other. In other words, to understand or predict behavior, the person and his environment have to be considered as *one* constellation of interdependent factors. We call the totality of these factors the life space (LSp) of that individual, and write $B = F(P,E) = (LSp)$. The life space, therefore, includes both the person and his psychological environment. The task of explaining behavior then becomes identical with (a) finding a scientific representation of life space (LSp), and, (b) determining the function (F) which links the behavior to the life space. This function is what one usually calls a *law*.²

The Effect of the Group on the Individual. The Marginal Child.

With his interest in the life space of the child, Lewin was most concerned with the social group in which the child participates. His study of the effects of autocratic, democratic and laissez-faire situations is a classic. Here he discusses some of the factors important for the child as a learner in a group.

The effect of group belongingness on the behavior of an individual can be viewed as the result of an overlapping situation: One situation corresponds to the child's own needs and goals; the other, to the goals, rules and values which exist for him as a group member. Adaptation of an individual to the group depends upon the avoidance of too great a conflict between the two sets of forces (Lewin, 1938).

A child usually belongs to a great number of groups, such as his family, the school, the church, friends. Within the family he may belong to a subgroup containing him and his closest siblings. The effect of the various groups, particularly whether or not the child is ruled by the ideology and values of the one or the other, depends upon the relative potency of these groups at that time. Schanck (1932) has found that the influence of public or private morale is different at home and in the church. In school children, the tendency to cheat changes with the social setting (Hartshorne and May, 1929).

Many conflicts in childhood are due to forces corresponding to the various groups to which the child belongs. Such conflicts are particularly important for children in marginal positions, that is, for children who are standing on the boundary between two groups. One example is the adolescent who no longer wants to belong to the children's group but who is

² Kurt Lewin, "Behavior and Development as a Function of the Total Situation." *Manual of Child Psychology*. Second edition. L. Carmichael, editor. New York: John Wiley & Sons, Inc., 1954. p. 919. (By permission of John Wiley & Sons, Inc.)

not yet fully accepted by the adults. Uncertainty of the ground on which the child stands leads to an alternation between the values of the one and of the other group, to a state of emotional tension, and to a frequent fluctuation between overaggressiveness and overtimidity (Lewin, 1939).³

An example of the current vitality of the idea of associative learning is found in the work of Mowrer who emphasizes conditioning as a basis of much learning.

Around the turn of the century a kind of revolution occurred in American psychology which soon shifted the accent from the study and description of "consciousness, as such" to the reflex-arc phenomenon of conditioning (sign learning), while Thorndike, Hull, and others, using equally objective approaches, identified and extensively studied trial-and-error (solution learning).

Various writers have attempted to found a complete psychology of learning upon one or another of these principles but it is now clear that it is not a question of either-or but of *both*. Moreover, it is now apparent that these two forms of learning exist and function, not side-by-side, but end-to-end: sign learning is the process whereby *external* events come to produce *internal* drive states, and solution learning is the process whereby *internal* drive states produce *external*, overt behavior. We thus advance from a simple, and pretty clearly inadequate, S-R psychology to an S-R:S psychology. By drawing a circle (O) around the R:S part of this sequence, we not only rediscover the "organism" but we redeem it from the state of "emptiness" to which extreme behaviorism condemned it, and thus begin, realistically, to examine the organism-as-a-whole." . . .⁴

Secondary Reinforcement. Some of the liveliest current theoretical controversies and most important investigations in the whole field of learning have to do with secondary reinforcement. Much of this activity centers around two very different conceptions of the nature of this phenomenon.

It has long been known—see, for example, the work of Williams—that specific stimuli or situations which have been associated with basic satisfactions such as hunger reduction, become capable of serving, in their own right, as "reinforcing agents." In other words, an organism will be rewarded —this can be demonstrated in various ways—not only by reduction in some basic drive (primary reinforcement) but also by an object or by other circumstances which have regularly foretold such a reduction. The question is: How does this process of secondary reinforcement operate? Hull's answer has been that secondary reinforcement is a "conditioned" form of primary reinforcement. Miller and others have favored the view that secondary reinforcement is simply the reinforcement which occurs when a secondary drive, of whatever kind, itself undergoes diminution.

³ *Ibid.*, p. 945.

⁴ O. Hobart Mowrer. "Learning Theory." *Review of Educational Research* 22: 492; December 1952.

The latter conception of secondary reinforcement is thoroughly consistent with the two-factor (and sequential) conception of learning delineated in the preceding pages. Thus, for example, punishment as it has been analyzed in this chapter is dependent upon a form of secondary reinforcement: once fear has been connected, by means of conditioning, to a particular response, the response of stopping or reversing that response will be secondarily reinforced by fear *reduction*. Elsewhere the writer has made use of this conception of secondary reinforcement for quite a different purpose, namely to account for the first stage of language learning, both in human infants and in those species of birds which can learn to "talk." Here the central notion is that conventional word noises are first tried and then perfected by babies and birds alike because these noises have been associated with primary drive reductions provided by their human caretakers. When the bird or baby succeeds in making a noise which is a "reasonable facsimile" of one commonly made by an adult human being in the context of primary reward, such a sound, when self-produced, will have some of the same comforting and reassuring (secondarily reinforcing) qualities as does the sound when made by others. Konorski has independently advanced the same mechanism as responsible for the learning involved in teaching a dog to "shake hands."

"Reasoning" and Mediational Responses. One of the chief criticisms that has been leveled at learning-theory approaches to psychology has been that trial-and-error behavior, no less than conditioning, is "blind," "automatic," "mechanical," "unmeaningful," and thus incapable of providing a satisfactory explanatory basis for the "higher" mental processes and behavioral feats commonly exhibited not only by human beings but also by certain other organisms. It appears that the type of learning theory outlined in this chapter is well on its way to meeting this objection.

One of the first facts that needs to be noted in this connection is that conditioned responses, as here conceived, may have not only motivational properties but also guiding or "cuing" functions as well.⁵

Many psychologists have tried to find other explanations of learning than mere contiguity in time and space or routine drill in school situations. Many of these scholars stress importance of the learner's active search for relationships or a problem solving approach in the learning situation. Nearly all emphasize the importance of the meaning of the problem to the learner and understanding on his part. For somewhat meaningless repetition are substituted such terms as "search," "insight" and "purpose." Most teachers will probably agree that the learner's understanding of his purposes, the way in which they are to be met and the climate of the classroom are essential in most school learnings. Following are excerpts by Tolman who, like

⁵ *Ibid.*, p. 488-89.

Lewin, goes beyond the simple figure-and-ground concepts of early Gestalt psychology to include more on the dynamics of the individual learner.

In commenting on his book, *Purposive Behavior in Animals and Men* (1932), Tolman says:

I still would want to emphasize the distinction to which I was trying to draw attention by the use of the two concepts "means-end-readiness" and "sign-gestalt-expectation." This was a distinction which few readers, if any, seem to have understood or, at any rate, to have remarked upon. By the introduction of these two concepts I was trying to say that what the organism acquires in a given *concrete* situation is *first* an "expectation" that by responding to this spatially and temporarily located *concrete* sign (or means) by a given behavior it will arrive at a further concrete "significate" (or goal) and, *secondly*, that the organism is also acquiring a general "readiness" thereafter to accept this same general *type* of sign or means as leading to the same general type of significate or goal. The sign-gestalt-expectation is limited to, and goes off in, the particular concrete situation. The means-end-readiness is a more universalized disposition which, once acquired, the organism carries about with him to new situations. I today would still hold to this basic distinction, although I would now phrase it somewhat differently. Instead, that is of now talking about concrete sign-gestalt-expectations and correlated, governing means-end-readinesses, I would speak, rather, of concrete "behavior-spaces" of the moment and of governing, controlling "belief-value matrices." These new terms seem to me to emphasize better another essential point of the doctrine which is that each single sign-gestalt-expectation is always part of a larger *field* of expectations and that any single means-end-readiness—belief-value unit—is also part of a larger field or *matrix* of such units.

In connection with my new notions of the "behavior-space" and of the "belief-value matrix" I would now find a certain further defect in the book in that concepts "sign-gestalt-expectation" and "means-end-readiness" did not allow for the "self" as an object within such an expectation or such a readiness. It is probably the influence of Lewin, with his concept of the "Life-Space" and of the "Psychological Person" as *in* the Life Space, and the influence of psychologists and sociologists, who have been investigating group phenomena, which have led me now to substitute a behavior space, which contains both a behaving self and goal-selves and a belief-value matrix, which also contain universalized self-images.⁶

With the newer emphasis on meaning and understanding in learning, many teachers are becoming aware of the importance of studying the social factors in learning. The final two excerpts illustrate social

⁶ Edward C. Tolman. *History of Psychology in Autobiography*. Edited by Herbert S. Langfeld, Boring, Werner and Yerkes. Worcester, Mass.: Clark University Press, 1952. Vol. 4, p. 331-33. (By permission Clark University Press.)

influences on learning in two ways. First, Davis stresses the importance of the social background that the child brings to school learning. The second summary statement by Kelley and Thibaut emphasizes the fact that most children in school learn not as isolated individuals but as members of groups.

In the first series of quotations from his address before the 1950 Midcentury White House Conference on Children and Youth in Washington, Davis is talking about the importance of understanding children from lower socioeconomic groups and of developing their potentialities to the highest possible level:

From the time that these children begin school—and more than 70 out of 100 of our elementary school children come from these lower socio-economic groups—most of their ability is misdirected or wasted. This vast store of ability in these millions of children in the lower socio-economic groups is largely wasted because their teachers do not understand the basic cultural habits of the working groups. As is true of the staff in the armed services and in industry, and of social workers, clinicians, and psychiatrists, more than 95 out of every 100 teachers are from the middle socio-economic groups. The teachers, therefore, come from a cultural way of life markedly different from that of the majority of the pupils. Our teachers do not understand the behavior and goals of the lower socio-economic group of pupils. The lower socio-economic group of pupils, on the other hand, do not understand, and therefore cannot learn, the teachers' culture. . . .

The slum child, whose own parents curse as a routine method of communication, fight, and consider the school unimportant in their futures, lives in a physical, economic, and cultural reality basically unlike that in which the middle-class child is trained. Therefore, if the slum child is to be realistic, many of the habits and attitudes which he learns will inevitably differ from those of the more sheltered, intimidated, and highly supervised middle-class child. That behavior which middle-class teachers, clinicians, and psychiatrists often regard as "delinquent" or "hostile" or "unmotivated" in slum children is usually a perfectly realistic, adaptive, and—in slum life—socially acceptable response to reality. . . .

On the other hand, the middle-class child is pressed by parents to learn too early and fast. Contrary to popular belief, the middle-class child is required to help with chores earlier, and to assume responsibility for other children earlier. As would be expected, he has to come in earlier in the evening and to work longer on school lessons. Middle-class children are more worried—they suck their thumbs and show other anxiety-symptoms much more (3 to 1) than do lower-class children. But their family's insistent pressure upon them for early and rapid attainment, and for conscientious work habits, makes middle-class children work much harder in school.

Thus they please the teacher much more than do the lower-class children. . . .

During the last five years, at the University of Chicago, an intensive and cooperative study of the present intelligence tests has been carried out, on a grant from the General Education Board of the Rockefeller Foundation. The study revealed:

(1) Ten of the most widely used standard tests of intelligence are composed in an overwhelming proportion of questions on which the higher occupational groups are superior.

(2) This superiority is found, upon study, to be associated with the type of vocabulary used in these standard tests and with the greater training and motivation of the higher occupational groups with regard to these tests. . . .

The type of problem in present tests, which is clearly biased, may be illustrated by the following:

A symphony is to a composer as a book is to what?

() paper () sculptor () author () musician () man

On this problem 81 percent of the higher socio-economic groups marked the correct response, but only 51 percent of the lower socio-economic group did so. In an experiment designed by Professor Ernest Haggard we made a problem similar to that just read, but we used words and situations common to all social groups of children. This problem was read to the pupils:

A baker goes with bread, like a carpenter goes with what?

() a saw () a house () a spoon () a nail () a man

On this culturally fair problem, 50 percent of each socio-economic group gave the correct answer. . . .

How are we going to increase the proportion of our population which has skill? Only by recruiting more children who are poor but smart. That is an urgent national requirement. It means that the schools must discover and train effectively many more of the able children from the lower socio-economic groups.

If we do not find, and train effectively, more of these children with quick minds, (good native ability) in the vast lower socio-economic groups in America, we shall be very seriously challenged by the tremendous populations of Asia and Eastern Europe.⁷

Finally, when they are in schools most children learn in groups. Unfortunately, many texts in educational psychology consider learning largely as if it were an individual matter. It is true that it is an individual who learns but it is equally true that he often learns as a

⁷ Allison Davis, "Socio-Economic Influences upon Children's Learnings," *Understanding the Child* (Published by the National Association for Mental Health.) 20: 10-16; January 1951.

member of the group. In the excerpts below, Kelley and Thibaut summarize some of the differences in individual and group learning and then go on to indicate recent trends in the study of group action. While most of the research quoted involves adults, Kelley and Thibaut list a number of topics which should be studied by teachers and research workers using either action research or experimental research techniques.

To summarize thus far—as compared with working alone, working with a passive audience or with other persons at the same task seems to have the following effects:

- (a) Greater quantity of work where physical output is involved, suggesting increased motivation to perform the task.
- (b) Lesser quantity or quality of work where intellectual processes or concentration are involved, suggesting that social stimuli are able to compete successfully with the task stimuli.
- (c) Inhibitions of responses and qualitative changes in the work, which suggest that the person somehow “takes account” of the others as he goes about his work, e.g., he has fewer idiosyncratic thoughts, exercises moderation in judgment, and gives more “popular” or common associations.
- (d) Greater variations through time in his output, indicating the presence of periodic distractions and/or the effects of working under greater tension.
- (e) There is some evidence that these effects wear off as the person adapts to the social situation. . . .

With the 1940's the study of small groups saw a drastic shift in focus, partly, we presume, because of developments in sociological field research of the earlier decade (in particular the pioneering Western Electric studies; cf. Roethlisberger and Dickson (1939)), partly because of a broadening conception within psychology of the proper provinces of research activity (as evidenced in social psychology by the rapid adoption and widespread use of attitude measurement techniques), and partly because of the theoretical emphases of Lewin (1951) and the central roles played by his students in formulating the group research of this period. The trend was away from concern about the end products of problem-solving activity, whether individual or group, and toward an emphasis on motivations, emotion, and interactions of individuals within the group. This new concern is clearly reflected in the main topics selected for investigation: security, fear, frustration, interpersonal relations (sociometry), communication, etc. From the point of view of our analysis of group problem solving, one of the most important topics initiated during this period has to do with the motivation of group members in relation to group goals. . . .

. . . While taking less account of the formal and concrete products of group effort than earlier investigators, those of the last decade have placed much greater emphasis upon observations of the ongoing stream of be-

havior (interactions and communications) which constitute the problem-solving process. Another important facet of this period—and one clearly related to the above trends—has been a broadened conception of what can be varied experimentally in studying small groups. Earlier experimental operations had been confined largely to such variables as group size, type of problem, etc. Following Lippitt's pioneering variations of leadership style (cf. Lippitt and White, 1943, 1952), subsequent investigators have varied such factors as group cohesiveness, status relationships, uniformity pressures, and kind of decision process.⁸

These excerpts have not been given as a systematic coverage of current learning theories. Rather they are presented as examples of some of the ideas now engaging the attention of research workers in learning and as views which some teachers may wish to study further for themselves. The sources of the quotations and other references given in Appendix B indicate where teachers and others may do more reading and studying for themselves. The next section supplements these basic but broad considerations of learning with some sample research about learning in specific subject matter areas.

Research in Curriculum

Learning is usually complex even in specific school skills. When children learn they learn something, both directly and indirectly. This something may be a related or even incidental learning such as an attitude of like or dislike for a teacher of arithmetic or spelling along with the direct learning encouraged by the teacher in knowing words in spelling or the multiplication of decimals in arithmetic. The previous section and Appendix B give many general hints about the process of learning stated in broad and sometimes theoretical terms. In addition to studying such general descriptions, the teacher can learn a lot about specific learnings from research in particular curricular areas. Some teachers get interested in a special "subject" such as reading or history or science and many secondary teachers, at least, have an initial advantage here in their background knowledge of a special field. Considerable research evidence about learning in subject matter fields now exists. This information not only contains suggestions about teaching methods but includes many ideas and insights about

⁸ Harold H. Kelley and John W. Thibaut. "Experimental Studies of Group Problem Solving and Process." *Handbook of Social Psychology*, Gardner Lindzey, editor. Reading, Mass.: Addison-Wesley Publishing Company, 1954. (By permission of the publishers.)

children's learning in classroom activities. The research on learning discussed in this section accordingly occupies an intermediate position between the scientific laboratory of the psychologist and Miss Brown's third grade in action.

Discussions of research on specific school learnings are often organized according to subject matter. For example, we have many research studies in reading and arithmetic, not so many in social studies or music. Research may also be organized around large problems found in many subject matter areas, such as readiness, individual differences or concepts to be learned. To parallel the preceding section the following examples of research are grouped according to the titles of previous chapters in Part II of the yearbook.

The Teacher Selects, Plans, Organizes

American schools, rightly or wrongly, are strong users of textbooks so that much of the selection and organization of problems or topics have been partly done for the teacher. Words included in spelling lists are those words commonly found in adult and children's writing (Horn; Rinsland).⁹ These words are sometimes grouped by similarities in spelling or meaning before the child opens his book. The teacher and pupils, however, must do some selecting and planning to supplement words in the spelling text with words used most frequently. The weekly plan for teaching and testing of the standard list too may be varied by the teacher in light of the research study (Gates) which showed that children in grades 2 and 3 do better on a weekly study-test plan and children in the later grades on a test-study plan, the latter involving an initial test and concentration on words misspelled. Variation in the selection and study plans may be needed also as special spelling needs arise. The teacher's knowledge of pupils' needs can be combined effectively with knowledge of research about spelling.

Materials in other subjects are also frequently well organized for the teacher. Modern arithmetic and reading texts present careful sequences in building quantitative and verbal skills and in helping children to attach meaning to them. Curriculum guides in social studies give planned sequences of activities or units which gradually move away from the immediate concerns of home, school and neighborhood to the far away in distance and time. Health information and physical activities are presented in grade sequences of con-

⁹ References to the illustrative studies given in this and the next sections are listed at the end of this chapter.

cepts children can grasp and suggest activities suitable to their stages of muscular and mental development. Research has shown fairly clearly what children are typically able to do at different ages and grades. The teacher's job, accordingly, is to organize activities within a framework at least partly laid down by textbooks or curriculum guides.

To accomplish this task, the teacher uses knowledge both of children and subject matter. Research tells us that some number combinations such as 7 plus 9, are harder to learn than others such as 4 plus 4 (Rock and Foran). The teacher who believes that the class or some individuals in it need more work to make knowledge of the basic skills automatic, may plan for sets of combination cards. For example, the including of seven easy and three difficult, or some similar arrangement, may provide for individual practice on needed skills. As another example, the teacher knows pretty well how much reading to assign in an allotted time, how much homework to ask for, depending on his research knowledge that some kinds of reading are slower than others and on his acquaintance with what different children can do in various reading situations. These ordinary situations in classrooms do not illustrate clear-cut principles of learning, but they do suggest that knowledge of children can be combined with a background of research as the teacher plans daily activities.

Unfortunately, the available research is not always a clear guide to the teacher's plans. How much phonics should be included in the third grade reading program? Despite scores of studies, opinion is still far from unanimous. Put another way, the teacher must make decisions about phonics skills needed by individual children (Burrows). How detailed a marking of students' compositions should an English teacher attempt? Again, there are no final direct answers although teachers know that paragraphs and themes may be marked in many ways. Research gives considerable evidence about typical measures of sentence length, verb usage, correctness, and about a composition as a whole but is not clear about measuring creativity in written work. As the teacher plans the best use of time in marking 100 compositions (many hours are involved), some research suggests the way in which marking should be done (Dusel; Hook). There are few clear-cut answers which apply to all children on how social behavior is related to knowledge of social studies facts or on how soon to review a series of experiments in chemistry. There are few final guides to organizing a classroom for work and study, but certain research does give hints about effective practices in grouping

a class and similar procedures (Wrightstone). Research gives leads but not final answers to many questions a teacher faces in selecting, planning and organizing for learning.

The Teacher Introduces Learning Tasks

Teachers can find scores of adequate research studies dealing with readiness for reading, arithmetic and other school learnings. Some of these have been summarized by Cole and by Hildreth. Such writers as Betts and Monroe have summarized research in reading readiness and Riess has a summary of 150 investigations up to 1947 on readiness for arithmetic. Readiness for handwriting and spelling also have been studied but evidence about readiness for social studies and for science activities is meager. Books by Michaelis, Quillen, Otto and Hanna are not research reports but give many instructional leads for assessing readiness for social learnings. Many of these should be tested by experimentation. The whole question of children's concepts in relation to their readiness for learning offers many possibilities for basic or action research. For example, Haupt showed that children in the primary grades could think about science problems centering in the energy relations of light to green plants just about as well as older children. Wesley and Adams have devised a hierarchy of social concepts. Children's knowledge of various concepts which are necessary for certain learning tasks has been summarized by Russell.

The general psychology of learning offers many examples of studies of relationships between motivation (Hilgard and Russell) and readiness for learning. Sections on readiness are found in most books on curriculum research (Shane). While interest is only one influence on readiness for reading or other activities, many accounts of children's interests give some leads to the teacher in introducing learning tasks (Jersild; Kuder and Paulson). Because readiness is a factor basic to learning not only in first grade but all through school, studies of children's reading interests (Terman and Lima), science interests (Fitzgerald), play interests (Hartley), television interests (Witty) and others at all ages give further clues to ways of introducing learning tasks. Such a statement does not mean that children's interests are a sole guide to next steps; the discussion of the previous section indicates that the teacher plans and organizes with other criteria in mind as well.

The role of the teacher in helping identify learning tasks is supported by considerable research. Children are able to read with better comprehension scores if they know before beginning the purposes

for which they are reading (Gans). While the research gives little support to the value of formal analysis of problems in arithmetic (what is required, what is given, what is first step, is the answer reasonable?) it does show that helping pupils in methods of active attack on problems is useful (Buswell). The different psychologies of learning are fairly unanimous on the importance of a clear goal in learning. Cooperative defining of the task by teacher and pupils can be helpful. For example, in introducing a unit of work in social studies, learning will be more efficient and direct, if there is a teacher-pupil consensus on goals to be reached.

Recent research has also given teachers and curriculum committees considerable help on the selection of learning materials. The classic investigations of Thorndike and of Horn gave guidance on words to be learned and have since burgeoned into many more vocabulary studies, some 2500 of which have been summarized by Dale and Reichert. These studies have been applied to school materials in the controlled vocabularies of primary textbooks and in such readability studies as those summarized by Chall. Studies of the format of books, uses of pictures, the development of charts and the uses of excursions are examples of the wide variety of guides a teacher may use for background in planning what materials to use.

Research on learning in subject matter areas, like other general research, does not converge into certain general principles or laws of learning but gives scores of specific hints about ways of introducing learning tasks.

The Teacher Helps the Learner Interpret His Experiences

Questions of how much help to give the pupil, how to allow for discovery, how to help the adolescent apply learnings to his own concerns have not been studied extensively in curriculum research. Some work on developing appreciations in literature and the arts has been done on a demonstration or applied research basis (Lark-Horowitz). In general, however, the reader may wish to consult studies dealing with aspects of the general psychology of learning. For example, as early as 1913 Winch published a study of inductive versus deductive approaches to the presentation of material, and other researches have extended this topic in such areas as grammar and science. Other studies include experiments showing the close relationships of induction and deduction and the finding that a combination of both processes is useful (Skolnik and Goff, Boeck). Some of these are summarized in current texts in educational psychology. In addi-

tion, attention to interpretation while learning has been given considerable place in reading and arithmetic.

In the early schools of America, reading was associated with simple literacy. The reader's interpretation of what he read was confined largely to his comprehension of facts on the printed page. A widely used test of reading by Burgess, published in 1920, measured only speed and accuracy in reading, with accuracy limited to stated details. The yearbook of the National Society for the Study of Education published in 1937, and a later edition in 1949, greatly extended the concept of different types of reading. Even young children were found to engage in many kinds of work-type and appreciative reading. Even before this time, reading tests were devised to measure such abilities as reading for the main idea, to determine sequence, and to follow directions. Within the past 10 years some attempts have been made in research studies and experimental tests to determine the reader's ability to follow sequence, and to carry out directions. Within the past 10 years research studies and experimental tests have provided additional measures of critical and creative aspects of reading (Russell). Thus the interpretation of what reading is has been broadened by research and test materials and some of the newer ideas are used by teachers in daily activities.

Similarly in arithmetic, considerable work has been done on the interpretation of verbal problems. These studies aim to clarify the basic question of the best way to help children develop problem solving abilities. This movement has resulted in scores of studies and publications stressing meanings and understanding. As stated above, emphasis on the algorithm and on formal problem analysis has not proved very helpful in improving children's interpretation of problems. At the same time, active methods of attack on verbal problems can be demonstrated and learned (Brownell, Johnson).

Studies of interpretations run through many language arts investigations. The learner's responses to the writer's imagery, his understanding of material during listening, and written personal reactions to books and events have been studied. Many American schools in the 1920's went through the days of formal appreciation lessons for famous paintings or other art works. Currently these have been reduced to more informal appraisals of painting, novel, or poem with emphasis upon the content of ideas and their relationships to the child's or adolescent's other concerns (Arbuthnot). Probably most teachers would subscribe to the belief that appreciations and enthusiasms are "caught not taught" and so provide opportunities for group activities

and varied classroom uses of art or literary materials. This attitude, not yet bolstered by much research evidence, suggests the importance of indirect, collateral and concomitant learnings in children's activities with various art forms—certain plus-factors in genuine learning situations. One of the commonest of these may be, not only appreciation and attitude with a high emotional factor, but also the "learning how to learn" techniques described in Chapter Eight.

The Teacher Responds to Evidences of Pupil Learning

Many teachers attempt to evaluate pupil progress, not only periodically but as a part of daily learning (Thomas, Wrightstone and others). Such evaluation may be formal or informal, teacher-based or cooperative. Most books on the topic stress periodic evaluations and the use of standardized and teacher-made tests. Informal evaluation and emphasis on process rather than product should be extended.

In this volume on learning, and especially in Chapter Six, the point that evaluation is an integral part of the learning process is stressed. As the pupil models clay, writes a story, or prepares a committee report on the French Revolution, he learns best if he evaluates as he goes. In most of the earlier descriptions of thinking, such as Dewey's in *How We Think* and Wallas' in *The Art of Thought*, the writers postulated several stages in problem solving and creativity, one of the last of which was evaluation of a tentative conclusion or product. There is considerable evidence today in psychological research that evaluative techniques are not a distinct stage but run all through such thinking activities (Vinacke, Russell). Similarly, in most learning situations the child proceeds more efficiently if he is encouraged to check on his own progress as he goes. Specific examples of this recommendation are found in different researches on problem solving in mathematics and in science and in some creative activities.

Another example of evaluation of specific achievements lies in the extensive literature on diagnostic and remedial work in the school subjects (Blair, Brueckner, Gates). What may be called "the diagnostic point of view" suggests that a child's or adolescent's difficulties are caused. As such, the job of the teacher or other adult is not to judge or blame reading difficulties, or truancy, or delinquency but to attempt to understand causes. Most studies have shown that there are very specific reasons (usually a cluster or constellation of them) why a child is failing in spelling or arithmetic or handwriting or in any curricular achievement. Laboratory instruments and specific tests have been devised to get at causes, not symptoms, and some school

systems use clinics for cases of extreme difficulty. Much of this work is based on the belief that there are specific causes of learning difficulties and equally specific remedies (practice in phonics, the kinesthetic approach in spelling, etc.) which can be applied to them. There is now some evidence of the learner's general emotional involvement when he is retarded and the benefits therefore of some kind of therapy in treating his difficulty. Retardation in subject matter, however, represents one part of school work where considerable research evidence about specific learning has been accumulated.

As suggested above, evaluation of creative activities or thinking has been somewhat neglected in research studies. What happens as the child creates a poem or paints a picture? What measures of creativity can be used in an adolescent's short story or mosaic design? Work by Guilford and others with adults should be applied to school situations.

Implications of Research in Curriculum

The preceding four sections have illustrated briefly that there are many research studies in particular curriculum areas which have significance for an understanding of learning, both general and specific. The examples given are spotty and incomplete. Several important topics such as perception, reinforcement, class size, group work, and transfer have been omitted. However, perhaps enough studies have been mentioned to illustrate that the teacher or other school person may gain many insights about learning by studying research reports in subject matter fields. No complete summary of such studies is available although most of them are listed individually in *Education Index*. The *Encyclopedia of Educational Research* gives brief summaries in many areas and the *Review of Educational Research*, published five times a year, lists studies such as the ones mentioned above, usually in three-year cycles. Many separate research summaries of specific learning in reading, science and music are prepared by individuals or associations from time to time.

The studies quoted above and others of similar nature lead to the following conclusions, many of which should be regarded as hypotheses for further investigations:

1. Most research studies in curriculum have been oriented toward one of three viewpoints—child development, general learning theories and specific subject matter learning. (A few studies combine two or all of these approaches.) For example, a child development viewpoint

appears in reading readiness studies, learning theories have influenced problem solving investigations, and subject matter learning has been dominant in studies of grade placement in arithmetic.

2. Nearly all investigations of learning in specific aspects of the curriculum have been concerned with short time effects of methods and materials rather than long-term curriculum planning for six or twelve years of schooling.

3. The effects of individual differences on learning subject matter have been treated unevenly in the various fields. Many studies have attempted to find the one best method for all children instead of proceeding on the assumption that the best method or materials may differ from person to person. There is considerable evidence that some individuals learn to read, solve problems, or experiment more easily by one method than by another. Children therefore may be grouped according to learning methods that are most desirable or effective.

4. Some research studies, particularly in the field of reading, indicate that the teacher may be teaching and pupils may be learning most effectively if some activities are individual, some undertaken in small groups, and some shared by whole classes, or even larger groups. Grouping may be in terms of (a) pupil characteristics such as ability, personality, and interests; (b) methods of teaching; or (c) the specific task to be learned. Readiness for different types of teaching and for specific learnings should be extended beyond reading and arithmetic to other subject matter areas.

5. There are many limitations to studies of the acquisition of skills, facts and other more-or-less automatic products of children's learning. The role of meaning and understanding in such learnings has been investigated rather thoroughly but the psychology of perception, memory, and function in the child's life needs much more attention.

6. There is need for further evidence about collateral learnings or the concomitants of learning when the child is acquiring subject matter skills and concepts.

7. Emotional and personality factors in learning have been considered in some studies of attitudes and in diagnostic studies of learning difficulties. Much of the research in subject matter neglects the molar approach to children's learning.

8. The availability of measurement instruments and evaluation techniques varies widely in different parts of the curriculum. Some standardized tests may put severe limitations on learning activities.

A wide variety of informal measures of learning (observation schedules, teacher-made tests, etc.) have been used in research studies but are not easily accessible to teachers as individuals or in action research groups.

9. Without consciously stating the aim, many teachers and research workers have attempted to provide for transfer of learning to related areas and for improved skill in learning how to learn. Increasing emphasis on the learning process rather than the final product contributes to this point of view.

10. Certain topics of concern to research people and thoughtful teachers have been neglected in the research now available in curriculum fields. These include such items mentioned above as group factors in learning, perception, emotional influences, and critical and creative thinking. Studies exist on all these topics but the results are so scattered that committee work and action research should be used to supplement individual study of such topics.

11. Examples of concepts about learning running through the research studies quoted in this chapter and the descriptions given in other chapters include the following: learning as an active process; the importance of motivation and goal-seeking activity; the complex nature of different kinds of learnings; learning viewed both as a product and a process, with one affecting the other; the role of organizing and reorganizing, of search and of relational thinking in much school learning; the importance of meaning and use in relationship to permanency of learning and transfer of it.

12. Research in school learnings has not produced theories of learning broadly conceived so much as it has illustrated principles or concepts about learning originally produced by the various schools of psychology. The time may be approaching when principles of learning can be derived more directly from classroom practices. This yearbook illustrates ways in which concepts about learning (rather than principles or laws) may be generalized from school learning situations.

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CHAPTER TEN

Learning about Learning from Action Research

Abraham Shumsky

CONTRADICTION between ways of talking and ways of behaving¹ is something all of us have observed in ourselves and in our associates (mainly in the latter, of course). Being able to talk about better teaching or recalling accurately the wise statements of others is no assurance at all of better teaching. One of the great errors that we school people make is to fail to distinguish between facility with words and ideas and ability to behave consistently with those ideas. We often assume that boys and girls who can write and speak wisely about health will meet their own health practices wisely. Those of us who work with teachers continuously assume that those persons who use wise words about differences among individuals will make wise adaptations to those differences in their teaching.

The Cleavage Between the Teacher-Learner and Academic Subject Matter

Much of the teacher's education is based on this erroneous equation of word mastery and practical application. The result is often such superficial, or even meaningless, learning as is illustrated in these examples.

¹ This chapter is a summary of a project (6) conducted under the auspices of the Horace Mann-Lincoln Institute of School Experimentation, Teachers College, Columbia University, New York, N. Y.

A teacher finds that the reading in the textbooks does not relate to experiences of his lower class children and is not suitable for them. He decides to develop mimeographed material for his group. But this material deals with such experiences as "we went to the zoo and saw a lion."

The teacher is sincere and well meaning. He is ready to look at curricular experiences, to identify their limitations and even to inaugurate changes. Unfortunately, however, these changes were superficial and misguided. The "experience story" which he prepared was better suited to a kindergarten child than to a group of tough 11-year-old lower class boys.

What is missing in the teacher's education? Why did he misinterpret the unique experience of lower class children as "a trip to the zoo"? His record shows several courses in which the problems of lower class living were studied. He even wrote a paper summarizing research about the motivation of lower class children.

This teacher's knowledge of lower class living apparently can be presented in papers, but cannot be applied. It is knowledge that one remembers, but fails to integrate into one's emotional life. Therefore, it has not equipped him with enriched resources for facing realistic problems of teaching.

The limitations of this knowledge are not easily detected. The presentation of two writers may seem to be effective. However, one writer may present only ideas he has learned to repeat, while the other presents ideas deeply experienced. An extreme illustration is the talk of the parrot; for the listener the sentence is meaningful, but definitely not so for the parrot!

This teacher, like many others, has had an education that is "parrot oriented." Bookish and academic, he selected teaching as a profession and his teacher preparation reinforced these trends. Only when the teacher as a theorist had to become a practitioner was the impractical nature of his education strongly revealed.

This illustration is not unique. Many teachers find it difficult to translate the academic learnings of college courses into the language of classroom behavior. Often learnings in field programs and in in-service activities are as difficult to apply.

Shaftel presents a penetrating description of how curriculum improvement is often initiated.

One way is to call a teachers' meeting and have an expert (speaker) bring in "the word." Another is the "quickie" workshop which pours a lot of bright shining verbiage over the heads of the novitiates. In general

practice is the use of the curriculum committee in which the professionally more advanced teachers analyze needs and construct instructional materials which are passed on to teachers who did not participate in the process and for whom the material is again just verbiage. (5:295)

Little wonder that many curriculum innovations are applied *mechanically*. Within the last decades education has passed through several colorful phases (some of the disillusioned call them "fads"). The "what do you want to do and talk about today" period, and "self expression" and "let's do it in a group" were all evidences that the depth and value of basic principles had not been truly understood.

Teachers learned the new phrases and moved through the motions without grasping the meaning of the suggested innovation. The result was *implementation of gimmicks* rather than *ideas*. The so-called "reflection of feelings" without really understanding those feelings, or the establishment of a skeleton of committees without a spirit of co-operation are examples. In other words, people's reaction to learning without meaning is often the "gimmickatization" of the idea.

Many teachers themselves feel that their understanding of learned subject matter is too glib. But not only the "glib understanding" itself, but the emotional corollary is defeating. The teacher feels weak and becomes skeptical of basic ideals which now seem "frills" or "gobbledygook." He becomes critical of the stuffiness of in-service programs ("when are we going to stop *talking* and *do* something about this?"). But most important, he feels that his work is not meaningful and is not enriching.

When faced with these attitudes toward theory expressed by many practitioners, the in-service educator is tempted to conclude that teachers are "resistant" or "too practical-minded" or "looking for a gimmick."

This, of course, only intensifies the barrier between the in-service educator and the classroom practitioner and may result in both evading the major issue. The major issue is that when teachers resist learning, they are expressing a deep-seated feeling that this *knowledge* is not wholly satisfying; is not personally enriching and is not a guide for behavior.

This chapter proposes to cope with several questions. How can subject matter be made meaningful to teachers? How can learning about learning influence the behavior of the teacher? How can the shell of "glib understanding" which is good for exams and term papers be penetrated to move deeper toward knowledge which is alive in the daily work of teachers?

The Learning Process Is Complex

Our understanding of the learning process is often somewhat oversimplified. The following illustrations may help us understand the complexity of this process. One group of teachers "learned" about Lewin's study of authoritarian and democratic climates; another group studied techniques of diagnosing prejudice at school. But there was little carry-over between these learnings and daily practices in the classroom. Exploring the reasons, some said that all their life they had been exposed to teachers who gave instruction and that they themselves taught by giving orders. It was difficult now to change. Others admitted that they perceived threat in touching upon such a sensitive question as prejudice.

In working with teachers three questions should be emphasized:

1. What is my understanding of the learning?
2. How do I feel about this learning?
3. What adaptations in behavior are demanded?

Learning is not a logical process of "knowing about," but involves the feelings and behaviors of the learner. Learning should be seen in the broad context of the relationship between learner and subject matter. Any attempt to teach teachers about learning without exploring the learners' behaviors and feelings will result in a meager harvest.

A way of learning about learning which focuses on these interrelationships between the educational subject matter and the teacher-learner is discussed in the following sections.

The Personal Meaning of Action Research

Action research is based on the conviction that when teachers are actually involved in a scientific study of their on-the-job problem their day-by-day behavior in the classroom will change. As Corey says:

The study must be undertaken by those who may have to change the way they do things as a result of the studies . . . singly and in groups they must use their imagination creatively and constructively to identify the practices that must be changed—courageously try out those practices that give better promise and methodically and systematically gather evidence to test their worth. (1:8)

This description emphasizes the personal implications of the research experience to the teacher-researcher—and this is a daring interpretation of research. Historically, research has been seen as a

means of adding to theoretical or practical knowledge. The impact of researching on the researcher himself has rarely been considered. The research specialist is interested in the impact of the experiment on "others" rather than on "me." Detached, objective and therefore little threatened by conflicting attitudes he approaches the whole experiment as role playing rather than as an attempt "to play it for keeps." His ego investment in the old way of doing things is not challenged; resistance is not built up and is not expressed directly or in disguised form.

The teacher as the action researcher is not an observer but a participant. In his own class, the teacher does not stand by while things are happening—he is part of all that is happening. What happens impinges on him as a person. Action researching means that the teacher's ways of teaching, his relations with children and subject matter, are under scrutiny and subject to change.

Since the action researcher is an involved participant in the progress of the study, his part in the situation must be studied. A primary concern of the action researcher should be to look at himself by analyzing his intimate experiences while carrying on the study. Action research seeks to find a new and integrated approach—an approach which recognizes the objective scientific process of research and the subjective inner experiences of the researcher.

The Personal Meaning of the Action Research Problem

In evaluating a research problem, traditionally one thinks about such criteria as originality or potential generalizations which are embedded in the subject matter itself. But the action researcher in evaluating a problem thinks mainly about the criteria which are embedded in the *motivation* of the learner.

As he helps teacher-researchers identify an on-the-job problem, the consultant is often faced with resistance. Many teachers without verbalizing feel, "Do I really want to explore my on-the-job problem? What will it commit me to do? Is it safe? Which problem is safest to attack? What kind of person is the consultant? Can he help me in working with my lower East Side high school class?"

Action research has dimensions and qualities which are a promise to one teacher but may represent a threat to another; the threat and the promise reflect the teacher's attitude toward his work and its improvement.

These undercurrents of feelings influence not only the selection of

the research problem, but the involvement of the teacher in the project and its impact on his day-by-day teaching.

Setting the stage of an action research problem, the consultant should help teachers explore their feelings toward action research as part of their attitudes toward their work as teachers. Use of such projective techniques as free association to the word research and analysis and discussion by the researchers themselves is a means of confronting the teacher with his own deep-seated feelings.

Assessment

An action research problem develops after careful assessment of problems in teaching. Action research problems arise from real and major conflicts in the work of teachers.

The research specialist often superimposes a research project upon teachers. He formulates a problem and then he looks for a testing ground—a laboratory. The acuteness of the problem and whether it is a true or critical difficulty in the school are of secondary interest to him.

In contradistinction, the action research problem is deeply rooted in the school setting and not transplanted there. A major criterion in selecting a problem is whether the problem really exists in this class or this school. Before selection of a problem, teachers observe their classes, collect data to throw light on the problem, and analyze their observations with others.

Assessment starts with "what's bothering the teacher?" and ends with the same question. Between these two points, however, a gradual shift occurs in the teacher's perception of the problem. Emphasis in problem identification is on the teacher's concerns. The consultant who starts with the question, "What is the *title* of your project?" reveals his interest in subject matter per se. The consultant who asks, "What bothers you on your job?" implies an insight into the interrelationships between the learner and the learning.

Assessment can never be entirely objective. Exploration by another researcher may identify an entirely different problem. The choosing of a problem is an interplay of rational and nonrational factors which is a challenge to the researcher's insight and skill. His problem is to search both his subjective inner life and the teaching situation.

In problem identification several questions should be raised by the teacher: "What is the secret of my involvement, or difficulty in getting involved in a problem? What is it in me as a person which led to the identification of this topic?" As an illustration: A teacher wants to

work on the problem of religion in his class. Question should be raised not only about the problem and means of investigation, but also about what is the significance of religion in the teacher's own life.

The cleavage between learning and the learner can be abridged only by a continuous emphasis on the personal meaning of learning. The same point is more vividly revealed in the consideration of hypothesis development.

The Personal Meaning of the Action Research Hypothesis

The action researcher perceives the classroom as the source for his hypothesis. He first identifies a difficulty in his work and only then develops an hypothesis about the observed difficulty.

An illustration will make this point clearer. In group discussion about hypothesis formulation, the consultant refers to one person's project, and suggests a test of the hypothesis that more opportunities for small discussion groups will improve the children's oral expression. Is it a "good hypothesis"?

The action researcher, in evaluating whether this hypothesis is satisfactory, may respond, "This is a challenging hypothesis. But is it relevant to the specific difficulties in oral expression in the specific class? Did we *assess* the class to discover that opportunities in small groups were scarce? Perhaps better assessment may lead to the hypothesis that it is not lack of opportunities for discussion, but the activity, or the teacher's behavior which restricts oral expression. I cannot decide on an hypothesis before a more careful analysis of the difficulty."

In identification of the problem, action research must be deeply rooted in the school setting. But not only the *objective* of the study (for instance, improvement of oral expression), but also the *method* of attaining this objective (for instance, more opportunity for small group discussion) must be developed in terms of a difficulty perceived in the classroom.

Teachers themselves often express a belief that the hypothesis should arise from something which is missing in the situation. Often, when a teacher-researcher presents his new hypothesis, he is asked by his colleagues "How is this different from what you usually do?" In other words, they want to check and find whether the new approach (hypothesis) arises from limitations in previous methods.

Unless these relationships are recognized the hypothesis (the study as a whole) becomes mere formality. Moving through the motions of action research, a teacher might be doing an exercise in research

only partly related to his work and lacking in personal meaning.

The pressure of producing research in a college course, or the desire to make "concrete suggestions" in an in-service activity, may encourage sincere and well-meaning teachers to overlook the *real meaning* of the action research hypothesis.

Growth in Verbal Ideology

Framing an hypothesis is an opportunity for expressing a spirit of inquiry; an attempt to check subjective faith with objective facts. The hypothesizer says, "This I do believe: an individualized method of reading is more beneficial than a group method. Let me test my belief." The questions to be raised are: What is the relationship between the researcher's educational philosophy and the specific belief (hypothesis) to be tested? More specifically, how is an hypothesis derived from an educational theory and what in turn is its impact on the researcher's educational thinking?

To understand the theory underlying the hypothesis the study must be seen as part of broader educational issues. Modification or change in the hypothesis may result in changes in the teacher's philosophy. Excerpts from a reaction to the question, "What did hypothesis development mean to you?" illustrates this point.

In the first group conference I described my severe discipline problems in my ninth grade math class. I said, "The men teachers know how to discipline them, but do you want me, a girl, to push these rough boys around? I know one teacher who only looks at them and immediately they quiet down." Recalling these comments, I realize that I was actually working on a non-formulated hypothesis: "The traditional disciplinarian approach is a means of alleviating discipline problems in a math class." This hypothesis was a true expression of my state of mind and feelings as a beginning teacher in a slum area of New York City. It is doubtful whether I would dare present this belief in a "term paper" however many times I discussed it with my colleagues, or, more important, tried to act on it in various school situations.

The group discussion emphasized that my math program was almost entirely limited to drill. There was no discussion of math problems confronting the student in his everyday life. Group members suggested that the discipline problem might be related to the type of program I had. They brought some illustrations of their own experience. . . .

These were not new ideas to me. We discussed them many times in college and in teachers' conventions. In the beginning I felt a lot of resistance, but gradually, especially when the other teachers started to relate their own experiences, this resistance became weaker.

Reading about my teaching problem, I learned that the specific hypothesis—that discipline problems can be alleviated by a program emphasizing the math problems confronting the student in his daily life—stems from a broader theory of "developmental tasks." What are the problems confronting my students in their present stage of development? How can math help them work on these problems? Perhaps these are the clues to the solution of my discipline problem.

In this discussion of the relationship between hypothesis and theory, the teacher is clearly describing a shift in her educational belief; from a conception that discipline can be alleviated by authoritarian means to a conception that discipline is related to the quality of the math program. This shift represents important changes in educational theory. The first hypothesis stems from a theory that learning is not purposeful and intrinsic to the learner and that therefore he has to be coerced to learn. The second hypothesis is derived from a theory that learning is intrinsic and the learner's purposes and interests are somewhat different at each stage of development. An educational program should be designed in terms of these changing interests, or "developmental tasks" of the learner.

The example illustrates teacher-researchers who look into the broader rationale underlying their hypothesis, and who understand that a shift in an hypothesis may mean a definite change in *verbal ideology*. Change is at least partly related to the fact that they were helped to analyze their own processes of thought.

Is the Change Real?

The in-service educator must raise the question: is this change real? Does the change mean more than a verbal allegiance to modern educational slogans? Did the teacher only conform to the pressures of the group, especially the consultant, and decide to join the bandwagon?

The action research hypothesis seen in the context of an educational theory often leads to a new verbal ideology. This ideology has reality and meaning to the learner when formulated in an atmosphere of freedom and when based upon an intensive re-examination of the relationship between his system of values and his problems in the classroom.

Instrument Development—A Phase in Re-education

Many technical problems are involved in developing a means of gathering data. Development of instruments to collect data is a

creative rather than solely a technical problem, and is difficult to describe or convey.

Teachers are generally interested in promoting mental health, citizenship, independence, literature appreciation, and critical thinking. These goals are freely inserted into many "lists of objectives" of curriculum guides, but what is really meant is difficult to describe.

When a teacher-researcher wants to test an approach to the promotion of mental health, or discover children with a high or low degree of independence, he must define his objective *operationally*. Whether mental health or independence will be tested by observations, projective technique or other means is secondary to the major question of *what behavioral characteristics these goals stand for*.

Much of the threat teachers perceive in studying their classroom problems stems from a feeling of inadequacy and incompetency in translating objectives into the language of behavior.

"Since I am not a psychologist, how can I describe the evidences of independence in my classroom?"

Having to face reality and observe specific evidences of independence, the teacher finds that his understanding of this value is vague.

Reactions by teachers who had developed their own instruments for action research revealed that a bridge had been erected between theory and practice. On the one hand, they felt a better understanding of theory ("I know now much better what I was looking for"), and on the other hand, a readiness to implement the study ("I am ready to start my own study").

The success of this stage in action research depends upon whether it clarifies the study and fills it with meaning. The objectives of responsibility, creative writing, self-concept, or attitudes toward school are no longer obscure, inflated or verbose ("gobbledygook" in the language of many teachers). They are now meaningful descriptions spelled out by a certain instrument.

When constructing instruments to study a problem the researcher learns to think in the analytical language of specific situations, rather than in the synthetic language of generalizations. An instrument which tests decision making, vivid writing, or reading comprehension, enables the teacher to *visualize* many situations in which a large or small amount of those qualities may be shown. He knows the behavioral characteristics that these goals stand for and carries a more precise picture in his mind.

The Psychological Concomitants of Implementation

Implementation attempts to test an hypothesis. The hypothesis arises from deficiencies perceived in previous teaching method. The teacher questions, "What is wrong with my method and its philosophy? Could it be this? or this?" Analysis of these deficiencies helps the teacher arrive at an approach to teaching based upon a modified educational philosophy.

What is the depth of the new conviction? Does it represent outward conformity to the group or to consultant pressure? Or are there indications of growth and meaningful insights? Is the teacher really "converted," or does he still feel torn between the old and new ideologies? And most important—is the new conviction merely a professed value, or is the teacher ready to act on his new belief?

The reality of the action research hypothesis is tested by reality—that is whether it will work. The test of reality often reveals struggle, inconsistency and resistance of various intensity. Some teachers resolve the conflict by implementing the gimmick of the new approach while maintaining the spirit of the old. A shift from formal to creative writing for instance may mean assigning composition on topics like "A Happy Day," but analyzing the children's responses in terms of grammar and spelling. Other teachers show inconsistency, shifting back and forth from the old approach to the new, delegating responsibility to children but still making arbitrary decisions.

The difficulties of implementation in action research seem to fall on a continuum of various degrees of the teacher's involvement in changing his teaching. On one extreme of the continuum lie such solutions as change in the length of a teaching session, or administrative changes from heterogeneous to homogeneous grouping. On the other extreme of the continuum are such approaches as provisions for individual differences, or introduction of group process in the classroom.

Resistance toward the use and implementation of research reflects the teacher's personal investment in the present ways of doing things. Ego investment and accompanying threat and resistance are stronger when the quality of teaching rather than an external condition is challenged.

In the process of implementation some teachers defeat their own purposes and fight their own plans. This is a usual part of the struggle in trying to change the quality of teaching. The resistance and threat in facing a new situation, the blocking involved in identifying actual

teaching difficulties, are also created when the teacher tries to implement a new approach.

Many curricular innovations fail not because of their own fallacies, but because in the process of implementation the security of the teacher is shaken or shattered. A common observation, for instance, is that the teacher's attempts at more democratic classroom practices result in unruly behavior by the students. *Laissez-faire* often means that in the transition of learning a new teaching role the teacher's insecurity and conflicting attitudes *arrested* his power to exert leadership and to express himself as a teacher.

In a study which places a primary focus on the personal meaning of learning to the teacher-researcher, teachers should be guided to analyze the implementation experience and its impact. Questions like the following should be raised: Does the teacher follow the curricular innovation in spirit or only to the letter? Does he experience "conflicts of allegiance" between the old and the new program? Does the teacher sense that "he is not himself" in the new role? In short, it is the *psychological concomitants* of the implementation experience which must be understood and dealt with.

The Impact of the Analysis and Interpretation of Data

The impact of the stage of analysis and interpretation of data can be sensed through the reactions of teachers-researchers themselves who typically comment:

"Working only with secondhand material one works with attenuated ideas that were shrunk. In analyzing data one harvests the richness of his own experience."

"It is so different when you find it yourself."

The emphasis here more than in any other stage of action research is upon the emotional significance of "find it yourself." This often implies a high degree of readiness to accept learning; the researcher has reached a stage of "ripeness." This point should be further elaborated.

Research is a careful and systematic attempt to collect and analyze data objectively. Such an intellectual and brave endeavor requires that the teacher have some readiness to put himself at the mercy of evidence which may rock his convictions or throw them in a gloomy light. Lippitt points out:

Our defenses are down to quite a degree when we are in the research role and are looking at facts which are not something somebody is trying

to sell us, but something which we have made an effort to discover and in which we have invested personal energy to find the facts. (3)

When findings are served on a silver tray, the teacher's reaction often is "interesting, but it will not work in my class." When the teacher has, however, considered his own problems, developed his own beliefs or hypotheses, tried them in his own classroom and analyzed the results, it is different. His attitude is now a careful consideration of "Does it work in my case?" or "What does it mean in terms of my educational beliefs?"

Action research is often an attempt to desert an old way of teaching to test a new ideology (*theory and practice*). The findings are of great significance because they will determine whether a new way of teaching and thinking is going to be reinforced or rejected.

Negative Results

In research one speaks about *testing* an hypothesis. Teachers, however, often speak about *proving* an hypothesis, and this is significant. The first, testing, is an expression of an experimental attitude: "Let's collect evidence and see whether it works." The second, proving, expresses an attitude of "Let's collect evidence and show them that I am right." What happens when the teacher who aimed at "proving" his hypothesis gets "negative results"?

Negative results are considered the nightmare of researchers. In spite of the emphasis on hypothesis as tentative, the ego-investment is so great that often the researcher feels defeated if the hypothesis "did not work out."

Interest in the effect of research on the researcher, however, means that "negative results" are as valuable as positive ones, sometimes even more valuable. When a teacher-researcher approaches action research as a means of adding weight to conviction, perhaps only negative results can make him question his bias.

The teacher who says that information about the acculturation problem of Puerto Rican children in New York City is not relevant to her class, may need some "shock treatment" to awaken her. Attempts to convince the teacher that she is wrong may only lead to the impasse, "You know theory, but I know my class!" or to lip-service acceptance of the leader's point of view. Often only through her own systematic efforts at study can the teacher develop a *new theory* and understanding of what Puerto Rican children are really like.

This teacher-researcher "knew" the theory of acculturation before

the experiment, but this learning and knowledge were not alive. The teacher was able to talk about the theory, but was unable to translate knowledge into the reality of observation. Only by studying the life problems of her pupils did the teacher really learn what acculturation meant.

To conclude, an important purpose of action research is to develop generalizations that will guide the teacher in his future teaching. (1) Positive results in hypothesis testing often reinforce the teacher's innovations in theory and practice. Negative results are often a call for awakening and may provide an impetus to the development of new insights.

Action Research: Promise and Danger

Some critics of action research emphasize the danger that the results will be of poor quality:

"Teachers are going to do a botched up job with no real evidence."

"What's the use of having a poor instrument constructed by teachers?"

"Action research is an action technique rather than research."

Underlying this attitude are basic questions: Can classroom teachers do research? and is it valid? Corey in his discussion of the continuum of common sense and research replies to these questions:

The casual and subjective method of making practical decisions and appraising their consequences differs from research in the *degree* of care exercised and in the *degree* of confidence that can be placed in results. It is possible to progress, by stages, from the method of problem-solving that results in actions in which relatively little confidence can be placed, to a method resulting in actions in which a greater degree of confidence can be placed. (1:72)

Action research should be evaluated not only by its "findings," but also by its *educative process*. The teacher pressed by immediate problems begins to delve deeper and to understand generalizations about learning. For instance, the teacher bothered by the "concrete problem" of failures in reading becomes interested in children who are so emotionally disturbed that they cannot progress in reading. In other words, teachers' learnings are seen not only in the findings of action research, but in the process by which those findings are reached.

This chapter has underscored the interrelation between the learner and the learning through action research. This frame of reference

The stresses that the major danger is not a "non-valid product," but an *overemphasis* on the *end-result* and a *de-emphasis* of the *process*.

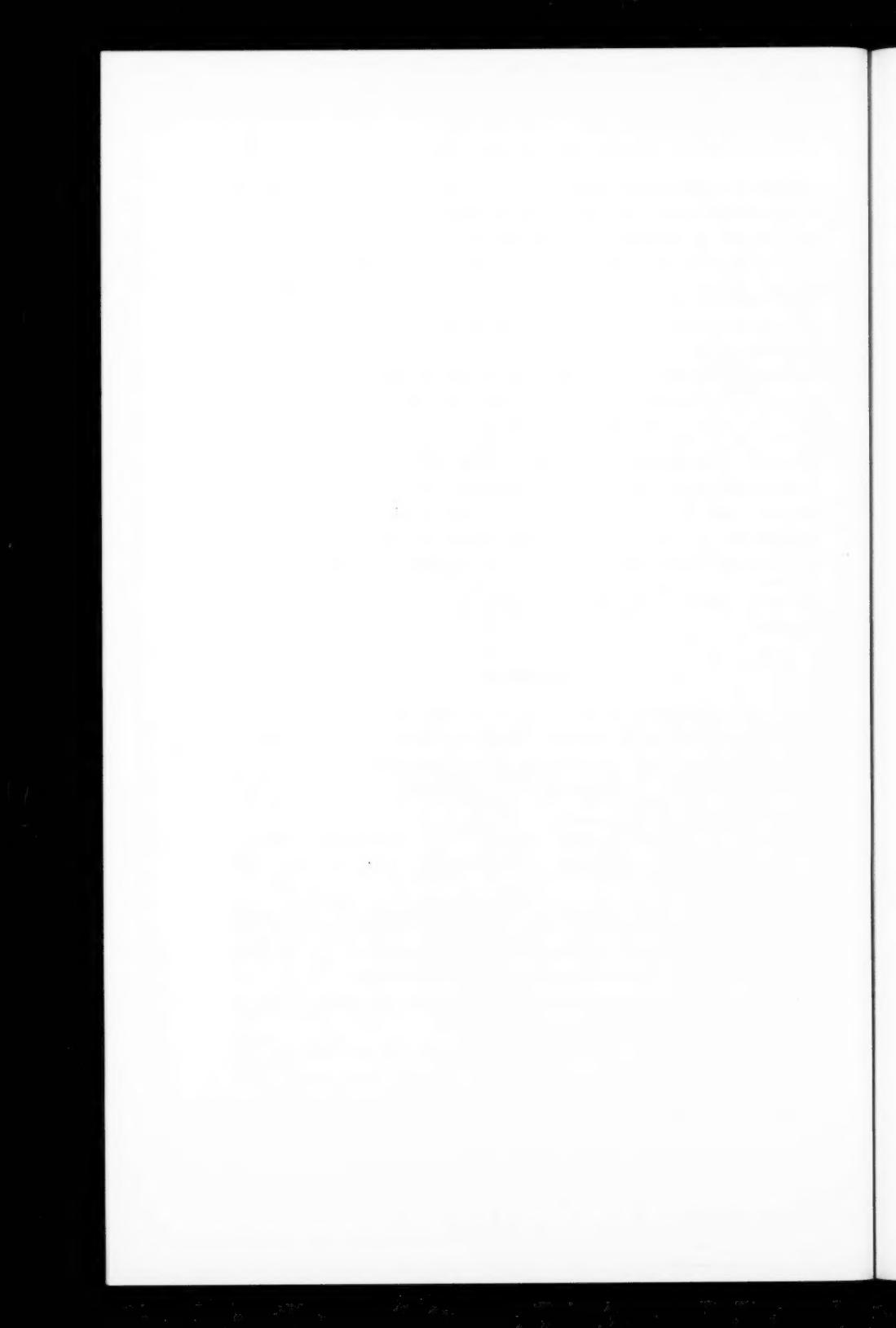
One book on research has as a last chapter "The Ultimate Goal—Publication." An anecdote says that an objective method of evaluating college teachers is the number of inches they have in the *Education Index*. The time may come when classroom teachers will be "expected" to produce research and may even themselves become interested in "publication."

Formulating the ultimate goal of action research as product or publication is dangerous. It may mean that teachers will overlook the importance of problems to them as persons, the impact on the hypothesis of their educational philosophy, or the relation between implementation and the quality of teaching. Personal and professional growth will not result from the experience of researching, if in that research only the rewards of producing are stressed.

Emphasis on the personal implications of action research for teachers will bring learning alive in the classroom. Overlooking this emphasis may make action research another approach to learning which is neither personally enriching nor a guide for improved teaching.

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APPENDIX A

Bibliography on Child Development and Learning

Julia Weber Gordon

THIS IS A "short, highly selected" bibliography on child development and learning for teacher use. That was the assignment.

Anyone who has the temerity to prepare a "short, highly selected" bibliography from the voluminous and often contradictory literature of these two many-faceted fields probably deserves whatever fate is certain to follow. To compound this folly, this short bibliography is for the use of all who profess to be "teachers"—as wide an audience range as there are kinds of people. To prepare such a bibliography is an extensive task, yet the need for relatively simple guides to the increasingly forbidding volume of literature in these two related fields cannot be disputed.

Perhaps what is needed is a list of references that will permit the user to do his own exploring of the research and that will enable him to draw out the principles of learning and of behavior change that seem to have considerable validity. The present list was compiled to serve these purposes. The selections were made, therefore, against a background of four criteria:

1. The list of references should represent an overview of the diverse points of view regarding human development and learning.
2. The list should offer a sampling of the variety of research techniques used, including new techniques being devised in an effort to find solutions to problems for which traditional techniques seem inadequate.

3. The selections should include the basic concepts held by the interpreters of human development and learning, and these should be accompanied by an abundance of explanatory and supporting data to make them clear.

4. The selections should contain bibliographies (except when the authors are reporting their own researches) of the sort that will enable the reader to pursue an area of study further in depth.

While the volumes are annotated, an explanation of the reasons for their inclusion may be helpful.

Certainly a bibliography dealing with learning should include at least one reference to learning theory. It is possible to begin with Hilgard (15),¹ follow through on his suggested references, and gain considerable knowledge and understanding of the major theories of learning and their implications for teaching. Two specific aspects of learning, that of perceptual discrimination and that of the organization of motives in an individual, have been of great interest both to learning theorists and to students of human development. The volume by Blake and Ramsey (5) on perception and the one by Brown (7) on motivation may serve as an introduction to the literature in these areas. Still another integral aspect of human learning and development exciting considerable study is that of the higher mental processes: thinking, reasoning, creative imagination, inventiveness. Russell (23) has attempted to organize what is now known in regard to children's thinking.

The practical outcome is seldom the guiding objective of theorists and therefore it is not surprising that persons who seek help from them often come away disappointed. Direction is more likely to come from those who find meaning in theories and research and are able to translate the principles drawn from them into sound practice. Russell (23), already mentioned above, the authors of the volume edited by Henry (14), and Cronbach (9), on a more elementary but sound level, all focus on the practical applications of research findings. It is possible to start with these volumes and then go back to the theoretical and experimental material on which these volumes are based.

Those volumes which deal exclusively with learning cannot be separated sharply from those which deal with child development. Development and learning in the individual are so interrelated that a consideration of one inevitably leads to an examination of the other. This is clearly evident in the books by Cronbach (9) and Henry (14).

¹ This number and the subsequent numbers refer to equivalent numbers in the bibliography on pages 202-12.

referred to above, though the major focus is on the way children learn. Two other volumes that deal comprehensively with development and learning, though in both the major focus is on development, are the advanced textbook edited by Carmichael (8) and a somewhat less advanced one by Breckenridge and Vincent (6). While it would be hazardous to select the single volume on this list that might be most generally useful to teachers, the one by Breckenridge and Vincent appears to be a favorite of many.

Development and learning are influenced by three major processes: organic, social, and psychological. Many different sciences, separately and with their own tools, seek explanations of certain aspects of these processes. The entire scope of this effort must be examined if partial and even erroneous conclusions are to be avoided.

Four volumes in the present list attempt to explain organic influences. Two of these use radically different approaches. Halstead (12) represents the "study of the parts" approach and Freeman (11) represents the "study of the whole." Also, the volume by Halstead is a report of a scientific study while the one by Freeman is an exposition of a behavior theory. The remaining two volumes are more general. Watson and Lowrey (25) present basic material concerning the physical growth and development of children. Breckenridge and Vincent (6), already noted, also present a good background of the variety of organic influences on behavior but in addition point out some practical implications for teaching and learning.

Four volumes deal with social influences: two with the influence of the family on the resulting personality of the child, one with the influence of the peers, and one with the influence of society in the large. Whiting and Child (26) and Davis and Havighurst (10), using the methods of anthropology and sociology, examine child-rearing practices to discover the basic processes in the socialization of a human being. The study by Berenda (3) represents an effort to examine the extent of peer influence. The volume by Riesman (22) describes fully an hypothesis relating to the impact of trends in the larger society on the personality of the individual growing up in it.

Four volumes deal with psychological influences. Snygg and Combs (24) describe a "whole" view of behavior that is rooted in the individual's concept of himself and of his world. Ribble (21) demonstrates how intimately related are physiological and psychological processes, while Barker and Wright (2) describe the sociological and psychological context in which development and learning take place. Jersild

(16) focuses on the implications for teaching and learning of the concept of self.

Organic, social, and psychological processes are so interrelated in their influence on the individual that efforts to deal with them separately have thus far yielded little in the way of a fully realized understanding of human behavior. In the past 30 years there has been a growing belief that the processes of development and learning will be better understood as there is more interdisciplinary research in which the same children are studied over a period of many years. Such is the objective of the longitudinal study of which the report by Macfarlane, Allen and Honzik (17) is a part. This study represents an attempt to validate theories by testing them in the lives of human beings. A textbook organized around a longitudinal, interdisciplinary approach is the one by Almy (1).

If theories concerning development and learning must eventually be validated in the lives of human beings, there must be an abundance of skilled workers in the field who are able to create sound methods that yield understanding and that produce solutions to the problems of guiding developing children. Four books are listed here that represent attempts to do this. Murphy (18) seeks to understand the inner life and developing personality of a single normal child. Rasey and Menge (20) test assumptions about learning and developing in their effort to help a group of children in a home for exceptional children. Barker and Wright (2), already mentioned, seek to understand the occurrence and influence of basic psychological phenomena in the lives of the children of a given community. Prescott (19) describes a process by which teachers may deepen their understanding of and increase their effectiveness with children.

Two books remain. These deal comprehensively with the development and learning of a particular age-group. Blair and Burton (4) compile research knowledge regarding the preadolescent. The authors of the volume edited by Henry (13) do the same for the adolescent.

Bibliography

1. ALMY, MILLIE. *Child Development*. New York: Henry Holt and Company, 1955.

Almy focuses on the growth and learning of six real human beings from birth to age 18. The author deals with the life histories of these six individuals chronologically in five stages. Theoretical background is woven into the stories of these children and is documented from the

researches of several disciplines and psychological points-of-view, especially from existing longitudinal studies. Chapter III in particular describes the kinds of processes—organic, sociological and psychodynamic—that probably were at work in the development of these six individuals.

2. BARKER, R. G., and H. F. WRIGHT. *Midwest and Its Children*. Evanston, Illinois: Row, Peterson and Company, 1954.

This is a study in psychological ecology, describing the psychological living conditions and behavior of the children of Midwest. The authors feel that psychologists know little of the frequency and degree of occurrence of their basic phenomena in the lives of men—of deprivation, of hostility, of friendliness, of social pressure, of reward, etc.—and that some of the methods of ecology must be used to find answers to such questions as, "How does life differ for children in large and in small families?" and "What changes have occurred over the generations in the way children are reared and in the way they behave?"

The authors found it possible to discriminate reliably naturally-occurring behavior-situation units of both individual and extra individual behavior: behavior episodes, behavior settings, and behavior objects. These are analyzed to show the structure of individual behavior and the relationships in social action and interaction.

3. BERENDA, R. W. *The Influence of the Group on the Judgments of Children*. New York: King's Crown Press, 1950.

This study analyzes the effect that group pressure has on judgments of children between the ages of seven and thirteen. It attempts to get at an understanding of the nature of the pressure and the conditions under which it is effective in modifying judgments. The child's conception of such situations and his reactions to them are also examined.

This study reveals that the individual's struggle to accommodate himself to others meets an obstacle in his deepest certainties regarding the world around him. The clearer the correct answer is to him the less he is swayed by the opinion of others: the more ambiguous the answer the more easily he is swayed. This study enables us to understand more fully the nature of the struggle between social pressures and the individual's demand for autonomy.

4. BLAIR, A. W., and W. H. BURTON. *Growth and Development of the Preadolescent*. New York: Appleton-Century-Crofts, Inc., 1951.

The authors have searched the literature in many fields in order to describe as faithfully as possible what boys and girls between the ages

of nine and twelve are really like. The major emphasis is on the socialization processes in the development of these children, since this period is one of "strong cultural imposition." There are summaries listing the characteristics of this period and the developmental tasks of later childhood. Finally there is a list of general principles to guide adults in working with children in this period.

One of the chief values of this volume, in addition to its practical helpfulness, is that it contains a brief, selected bibliography at the end of each chapter.

5. BLAKE, R. R., and G. V. RAMSEY. *Perception: An Approach to Personality*. New York: The Ronald Press Company, 1951.

This book is the result of the collaboration of 15 psychologists who attempt to combine the research findings from diverse fields of personality investigation and lay a foundation for a systematic theory of personality in terms of perception. The authors present the view that the study of perceptual activity provides a basic approach to an understanding of personality and interpersonal relationships; that it is from perceptual activity that an individual constructs his own personally meaningful environment.

Following a general orientation to this approach the authors discuss the organic bases of perception, the social factors influencing perception, and the role of perceptual constructs in the individual's behavior. Each author includes a bibliography of recent developments in the area he covers.

6. BRECKENRIDGE, M. E., and E. L. VINCENT. *Child Development*. Third edition. Philadelphia: W. B. Saunders Co., 1955.

The authors have brought together current findings especially from the researches of the various Child Development Institutes. The emphasis is on what we can learn from these that can help us to influence the growth of children. The term "growth" is used in the broad sense and includes also development and learning.

Organic, cultural and emotional influences on growth occupy about half of the chapters; they are described in a way that makes understandable the practical application to working with children. The remaining chapters deal with aspects of learned behavior: the development of imagination, thinking, reasoning; and the development of personality, cooperation, moral judgment. Each chapter has a selected list of references, containing a variety of viewpoints. There is a list of 1089 references in the excellent bibliography.

7. BROWN, J. S., and OTHERS. *Current Theory and Research in Motivation*. Lincoln, Nebraska: University of Nebraska Press, 1953.

This book contains six papers prepared for and presented in a symposium at the University of Nebraska on current theory and research in motivation. The papers deal with the problems presented by the concept of acquired drives, motivation as a factor in new responses, the experimental analysis of motivational factors in perception, the development and modification of motivational systems in personality, motivation in social behavior, and motivation and neurosis.

Each of these papers is immediately followed by a section of comments by one or two of the other authors. It gives the reader some understanding of the problems, complexities, and controversies in the area of motivation theory and research. An extensive bibliography also accompanies each paper.

8. CARMICHAEL, L. *Manual of Child Psychology*. Second edition. New York: John Wiley and Sons, Inc., 1954.

This manual is an advanced textbook intended to bridge the gap between elementary textbooks in psychology and the periodical literature reporting research in the area of child growth and development. In a series of separate chapters, each written by a recognized authority, a coherent picture is attempted of such important aspects of human development as the development of the newborn, of the infant, of the adolescent; physical and social development; character and emotional development; language development; and learning in children. Each chapter is accompanied by an extensive bibliography referring especially to journals reporting on the research that forms the basis for the chapter.

The first chapter presents an extensive overview of methods currently used in child psychology.

9. CRONBACH, L. J. *Educational Psychology*. New York: Harcourt Brace and Co., 1954.

This is an educational psychology book intended for teachers-in-training. The author has chosen as his central task to give the teacher an understanding of the way children learn. This becomes the basis on which he selects and integrates materials from research in child study, social psychology, testing, and mental hygiene. He has attempted to write a practical book that does not lose sight of the problems of the schoolroom.

The concepts are clear and understandable. Only a few pertinent references are included at the end of each chapter and these are

annotated. Many of these are references to the research in educational psychology.

10. DAVIS, W. A., and R. J. HAVIGHURST. *Father of the Man*. Boston: Houghton Mifflin Co., 1947.

This very readable, very human book attempts to explain how a child gets his personality. The material is based on a study of the child-rearing practices of 202 families. The training methods of lower class and middle class parents are contrasted and the effects of their training on the personality of individual children are described. The examples of children in the process of being trained also show how children in the same families learn different things and develop different personalities.

11. FREEMAN, G. L. *The Energetics of Human Behavior*. Ithaca, New York: Cornell University Press, 1948.

In this book Freeman accepts the challenge of the phenomenological approach and attempts to describe a behavior theory that will make it possible to arrive at an objective explanation of the organism behaving as a whole. Extending Cannon's principle of homeostasis in physiology he proposes the thesis that "all behavior is an attempt to preserve organismic integrity by homeostatic restorations of equilibrium." The author develops the basic thesis and then explores learning and personality development, among other aspects of behavior, through homeostatic analysis.

12. HALSTEAD, W. C. *Brain and Intelligence*. Chicago: University of Chicago Press, 1947.

This book presents evidence, based on 12 years of research on 250 subjects, concerning the behavioral effect of brain lesions in man. The facts reveal specialization of the frontal lobes of the brain for certain activities. Halstead and his colleagues used new instruments and quantitative methods with the technique of factor analysis to isolate the basic factors of higher mental processes. The author feels that the findings challenge the theories on which standard intelligence tests are based.

13. HENRY, N. B., editor. *Adolescence. Forty-Third Yearbook, National Society for the Study of Education, Part 1*. Chicago: University of Chicago Press, 1944.

This remains one of the important books in the area of adolescent development. It is a summary of the research and the concepts held up

to the early 1940's in the centers studying the growth and development of adolescents: Harvard, Yale, Western Reserve, Catholic University, the University of Chicago, and the University of California.

The authors deal with the physical development of and physiological changes in adolescents, their physical, motor and mental activities, and their socialization, especially in regard to the peer culture. The final section deals with the educational implications of the accumulated research findings.

14. HENRY, N. B., editor. *Learning and Instruction*. Forty-Ninth Yearbook, National Society for the Study of Education, Part 1. Chicago: University of Chicago Press, 1950.

This yearbook focuses the relevant data and concepts from the psychology of learning directly upon the problems of instruction in the elementary and secondary schools. The first two chapters outline the general nature of learning and the motivational basis of learning. Against this frame of reference specific types of learning are described in the second section: how children learn motor types of activity; information, concepts, and principles; interests, motives, and attitudes; social, emotional, and personal adjustment; esthetic types of behavior; principles and techniques of problem solving. In the third section the implications of the above for improving instruction in the early and upper elementary grades and in the high school are discussed. The last section focuses directly on teaching procedures designed to make the classroom a learning laboratory.

15. HILGARD, E. R. *Theories of Learning*. Second edition. New York: Appleton-Century-Crofts, Inc., 1956.

This book provides an introduction to the major theories of learning current in the first half of the twentieth century. It is a revision of the first edition published in 1948 but does not entirely replace the earlier edition. Selected lists of references for each of the major theories include books most representative of the theorist's contribution, shorter introductions to the theory, and critical reviews of the theory.

Hilgard also attempts to explain why present learning theories are unsatisfactory and makes some suggestions as to what is required to move toward a more satisfactory theory. One of his requirements, for example, is that a good learning theory should provide principles to guide instruction. As a sampling he lists (pages 486-87) 14 generalizations on practical matters on which he would expect a majority of learning theorists to agree.

16. JERSILD, A. T. *In Search of Self*. New York: Teachers College, Bureau of Publications, Columbia University, 1952.

In this book the author attempts to present a picture of the role of the teacher and the school in helping children and youth understand and accept themselves. He analyzes compositions written by students from the fourth grade through college describing what they liked and disliked about themselves, and makes some inferences about the way they regard their own personalities. He makes some hypotheses concerning the relation between self-understanding and understanding of others. Jersild contends that to help children and youth understand themselves a teacher must also continually strive to understand himself. He concludes that a curriculum that is planned to help people to self-understanding will be radically different from most present programs.

17. MACFARLANE, J. W., L. ALLEN and M. P. HONZIK. "A Developmental Study of the Behavior Problems of Normal Children between Twenty-one Months and Fourteen Years." *University of California Publications in Child Development*, No. 2. Berkeley, California: University of California Press, 1954.

This report is a statistical analysis of some 30 behavior patterns for more than 100 children, collected at yearly intervals for 14 years. The authors believe that there has been gross overgeneralization from highly selected samples of "problem children" and that data gathered on a sampling of children selected on a nonproblem basis would serve to give a more balanced picture. In this report the children studied were in the control group of the larger University of California Guidance Study of 252 children whose physical, mental, and personality development has been observed from birth to maturity. (Reports on other phases of the Guidance Study are listed in the brief bibliography.)

The basic purpose of this study is to discover if possible why some individuals develop mature and sturdy personalities whereas others rigidly cling to, or revert to, immature or ineffectual patterns. The authors believe that this report raises questions about some aspects of contemporary personality theory.

18. MURPHY, L. B. *Personality in Young Children*. New York: Basic Books, Inc., 1956.

In this intensive three-year study of a normal boy in nursery school, Murphy demonstrates a series of play and activity techniques she and her associates have devised for gaining new depths of insight into the inner life and developing personality of a young child. Colin is

described as he is learning to relate himself to his family and to his peers, and as he strives to live in his world and master the acceptable ways of the culture. He is shown trying to subdue his fears and aggressiveness, and developing his concept of himself. This account helps one to experience and understand as directly as possible the life of a child.

19. PRESCOTT, D. A. *The Child in the Educative Process*. New York: McGraw-Hill Book Company, Inc., 1957.

While the main purpose of this book is to describe a specific three-year program of child study carried on by teachers in service, it serves for the reader several other purposes. It presents a way of accumulating significant data about individual children, and also a way of interpreting the data so that a teacher may gain an understanding of the perceptions, the motivations, the self concept, and the behavior of each child. It demonstrates how knowledge from the various sciences dealing with human development can be brought together to aid in a more complete understanding of a child. It provides clues to help teachers work with children as individuals in group situations.

20. RASEY, M. I., and J. W. MENGE. *What We Learn from Children*. New York: Harper & Brothers, 1956.

In this book the authors re-examine assumptions about how children learn and prosper. In helping the children at RaySwift Gables, a home for exceptional children, to overcome their difficulties, the authors studied the responses of the children to their help. The new perspective which the study gave them led the authors to change their ways of working with children to match their changing beliefs. This book is a detailed story of the authors' experiences in the process of change. In the final section they deal with implications for public education of what they have learned.

21. RIBBLE, MARGARET A. *The Rights of Infants*. New York: Columbia University Press, 1948.

This little book, written by a physician, first published in 1943, created a great deal of controversy. Since that time it has been many times reprinted and the concepts developed in it have become generally accepted. These ideas are based on a long series of studies covering about 13 years. Included among these is a study, in progress eight years at the time the book was published, of over 600 infants.

Dr. Ribble believes that "human personality is a continuous development, and healthy emotions as well as free creative intelligence are rooted in early infant experiences." She describes the biological de-

velopment of the infant in the first year of life and presents some facts about the concomitant psychological needs. She presents evidence to show that "mothering" and fondling of the infant are biologically necessary for healthy mental development of the baby. The effects of the highly personal first adjustment between parent and baby on the future personality of the child are also presented.

22. RIESMAN, DAVID. *The Lonely Crowd*. New Haven: Yale University Press, 1950.

This book is subtitled, "A Study of the Changing American Character." The term "character" is used in the contemporary scientific sense of "social character," "the patterned uniformities of learned response that distinguish men of different regions, eras, and groups." It is Riesman's hypothesis that changes in population and technology everywhere are the chief correlates of changes in the social character.

In this volume Riesman attempts to describe as fully as possible the hypothesis he poses for the purpose of guiding research. In Part I he shows how changes in population and technology produce changes in the various agents of character formation, with three types of personality emerging as the inevitable result. In Part II he describes the political styles of these three types of personality. Part III considers the struggle between adjustment and autonomy in our society. In the final chapter he suggests some ways out of our dilemma.

An inexpensive paperbound reprint of this book is available.

23. RUSSELL, D. H. *Children's Thinking*. New York: Ginn and Company, 1956.

This book is based on research findings compiled from about a thousand references. Part I deals with the nature of thinking and children's mental development. Part II deals with the way children learn percepts, store memories, and develop concepts. The roles of emotion and attitudes in thinking are also explored here. Part III deals with the processes of children's thinking: association, concept formation, problem solving, critical thinking, and creative thinking. Part IV presents some hypotheses in regard to the improvement of children's thinking.

One of the major purposes of the book is to combine the findings of child development and of educational psychology and apply these to schoolwork.

24. SNYGG, D., and A. W. COMBS. *Individual Behavior*. New York: Harper & Brothers, 1949.

The authors have developed a frame of reference intended to give

a clearer, more meaningful understanding of behavior and to produce trustworthy principles which would make possible the prediction and control of individual behavior. This frame of reference is the phenomenological approach or the personal approach to behavior. With this approach human behavior is observed not from the outsider's point of view but from the point of view of the behaver himself.

The first eight chapters deal with the fundamental aspects of the phenomenological approach proposed: what individual behavior is, how it changes, what motivates it, what the individual is trying to do. The next six chapters explore the implications of this approach for the goals of education, for the task of the teacher, for diagnosis of individual behavior, and for therapy. A final chapter proposes the phenomenological approach as a method of science.

Dr. Combs' new revision of this volume is soon to be released.

25. WATSON, E. H., and GEORGE H. LOWREY. *Growth and Development of Children*. Chicago: The Yearbook Publishers, 1951.

While this book, written by two physicians, is intended primarily for those in the field of pediatrics, it is also an important help to teachers interested in children's physical growth and development as organic influences on learning. The factors of heredity and environment are discussed in the first chapter. This is followed by an account of those aspects of fetal development which help give a clearer understanding of development after birth. In postnatal development gross body measurements are given first and then the development of the various organs and organ systems. In the various stages from birth to maturity the wide range of individuality of growth and development is emphasized.

The aim of this book is to serve as a guide to those responsible for the optimum growth and development of children.

26. WHITING, J. W. M., and I. L. CHILD. *Child Training and Personality*. New Haven: Yale University Press, 1953.

This book examines the norms and variations in child training practices in a world-wide sampling of 75 societies and correlates these with a specific aspect of adult behavior. The child training practices of a group of midwestern urban middle class families are also examined in the light of this broad perspective.

The authors are interested in establishing some principles of personality development which hold true for mankind in general and not for western culture alone. They begin with the assumption that the culture of a group sets up many of the conditions which influence

what the members will learn and how they will learn it. The specific problem they deal with is the effects of personality characteristics established through childhood training upon the behavior of the same people when they grow to adulthood; specifically, what are the results of the child training process on the adult's reaction to illness?

The study draws heavily on the concepts and methods not only of cultural anthropology, but also of sociology, psychoanalysis, and learning and behavior theory.

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APPENDIX B

Bibliography on Learning in Classroom Situations¹

1. ADAMS, G. L., and L. BOWIE. "How We Learn: Implications for Supervision." *Education* 78: 211-15; 1957.
Various concepts about learning and their implications for the supervisor stated in six general suggestions.
2. AMATORA, SISTER MARY. "A Functional Approach to Educational Psychology." *Educational Administration and Supervision* 43: 175-81; 1957.
Presents the case for a more functional approach in the teaching of educational psychology to prospective teachers.
3. *Annual Review of Psychology*. Stanford University Press. Annual issues.
See chapters on learning.
4. BARNARD, MILDRED B. *Procedural Hypotheses in Teaching Deducible from Current Learning Theory*. Ed. D. thesis. Stanford, Calif.: Stanford University, 1955. 179 p.
Considers various learning theories and eclectic viewpoints. Uses the nine principles of the McConnell statement in the 1942 Yearbook of the National Society for the Study of Education as a basis for recommending classroom procedures. Gives more than 100 examples of learning theory applied to specific classroom activities.

¹ See Chapter Nine.

5. BARNES, FRED P. "Materials of Learning—and Learning." *Educational Leadership* 9: 402-408; 1952.

The effective selection and use of instructional materials require that consideration be given to the experimental state of the learner as well as to the learning objectives of the school. A graphical model is presented illustrating a theory of the interrelatedness of the above factors. The levels of instructional materials (direct experiences, manipulative materials, pictorial materials, symbolic materials) are appropriate only when related to the learner's stage in the experiential continuum (readiness, exploration and discovery, verbalization and symbolization, systematic generalization). Testing of this theory would give "promise of refinement for both the materials of learning and the achievements of modern education."—*Psychological Abstracts*.

6. BLAIR, GLENN M. "The Psychological Basis of the Modern Curriculum: How Learning Theory Is Related to Curriculum Organization." *Journal of Educational Psychology* 39: 161-66; 1948.

An attempt to relate learning theory to curriculum planning.

7. BLAIR, GLENN M., R. S. JONES and R. H. SIMPSON. *Educational Psychology*. New York: The Macmillan Company, 1954. Chapter 9, "Organization of Learning and Teaching"; Chapter 11, "Social Psychology of Learning and Teaching"; and Chapters 21, 22. "The Teacher as Learner;" etc.

8. BUGELSKI, B. R. *The Psychology of Learning*. New York; Henry Holt and Company, 1956.

Themes, principles, motivation—bibliography of 544 references.

9. CANTOR, NATHANIEL. *The Teaching-Learning Process*. New York: Dryden Press, 1953. xvi, 350 p.

A dynamically oriented conception of the teaching↔learning process formulated from the teacher's point of view is expounded. Part I (3 chapters) describes the prevailing traditional approach to education. Part II (6 chapters) develops some new insights into learning, and demonstrates their application in actual school conditions. Part III (3 chapters) generalizes the seminar discussions and characterizes the new kind of professional teacher herein envisaged. Part IV (2 chapters) outlines a philosophy of education for a democratic society. Throughout the book frequent use is made of protocols taken from recorded discussions of the seminar conducted by the author on improvement of skill in teaching.—*Psychological Abstracts*.

10. CASSEL, RUSSELL N. "Primary Principles of Learning." *Peabody Journal of Education* 31: 215-22; 1954.

This article is concerned with establishing certain psychological phenomena which are believed to be basic to all learning, and without which it is believed no learning can take place. The suggested primary principles of learning are: (1) structuring—degree of meaningful relationships present, (2) barriers or blocking of learner's goals—learner's needs, (3) empathy—learner's projection of self, (4) organization—figure-ground relationships, and (5) evaluation—knowledge of change by learner.—*Psychological Abstracts*.

11. CRONBACH, LEE J. *Educational Psychology*. New York: Harcourt, Brace and Company, 1954. xxvii, 628 p.

This book is prepared as an introductory text for college courses in educational psychology. The book provides for a thorough study of the learning process, its determining conditions and results. Material from child psychology, social psychology, testing and mental hygiene are integrated into the main theme.—*Psychological Abstracts*.

12. DASHIELL, J. F. "A Survey and Synthesis of Some Theories of Learning." *Psychological Bulletin* 32: 261-75; 1935.

An early attempt to reconcile various theories of learning, especially valuable to the teacher brought up on "schools" of psychology.

13. DeLONG, ARTHUR R. "Learning." *Review of Educational Research* 25: 438-52; 1955.

A review of 136 studies completed during 1952-1955 on learning theory, teaching methods in relation to outcomes, measurement of learning outcomes, and the role of the learner in the learning process. In view of the great increase in publications in this field and the more frequent use of the results of research by educators, it would be desirable for learning-research experts to adopt "a universally acceptable definition of learning" which would be very helpful in the clarification of a number of issues.—*Psychological Abstracts*.

14. HILDRETH, GERTRUDE. "Some Principles of Learning Applied to Reading." *Education* 74: 544-49; 1954.

The basic principles of learning are summarized and applied to reading. These principles give clues to techniques of instruction, to classroom management of learners, to the use and construction of appropriate reading materials. The author discusses the topic under 10 subdivisions: (1) purposing and motivation, (2) learning with under-

standing: reading for meaning, (3) experiential background basic to learning to read, (4) reading and spoken language, (5) the child must do his own learning, (6) learning to read requires forming habits, (7) learning by association, (8) the role of perception in learning to read, (9) the role of practice, (10) the role of attitudes and the emotions in learning to read, (11) individual differences.—*Psychological Abstracts*.

15. HILGARD, ERNEST R. "Methods and Procedures in the Study of Learning." S. S. Stevens, editor. *Handbook of Experimental Psychology*. New York: John Wiley & Sons, Inc., 1951. Chapter 15, p. 517-67.

Hilgard is at his best in discussing memorization and retention. This section should go far towards preparing the novice to plan and carry out an experiment in the field, and can even be read with profit by the experienced researcher. About 10 pages of tables of calibrated nonsense syllables and adjectives are presented. Here a good deal of Melton's unpublished material is made generally available, a welcome addition to the literature. Valuable suggestions on the definition of overlearning and the finer points of retention scores such as those given here could well serve as examples of statistical and experimental common sense which might well be applied by all of us in setting up scores and indices in our own areas of research.—*Psychological Bulletin*.

16. HILGARD, ERNEST R. *Theories of Learning*. Second edition. New York: Appleton-Century-Crofts, Inc., 1956.

The most complete statement of various theories with some attempt to find common grounds. Few classroom applications are given.

17. HILGARD, ERNEST R., and D. H. RUSSELL. *Learning and Instruction. "Motivation in School Learning."* Forty-Ninth Yearbook, Part I. National Society for the Study of Education. Chicago: University of Chicago Press, 1950.

A chapter dealing with the much discussed problem of motivation in a yearbook all of which is related to "Learning and the Teacher."

18. HOVLAND, CARL I. "Human Learning and Retention." *Handbook of Experimental Psychology*. S. S. Stevens, editor. New York: John Wiley and Sons, Inc., 1951. Chapter 17, p. 613-89.

Hovland first gives brief summaries of conditioning, verbal learning, and motor learning. He next goes on to deal with motivation, individual differences, efficient methods, distribution, the whole-part features, recitation, retention, reminiscence, transfer of training, causes of forgetting, and mathematical formulations of learning.—*Psych. Bull.*

19. KELLER, F. S. *Learning: Reinforcement Theory*. Doubleday Papers in Psychology. No. 13. New York: Random House, Inc. 1954.

Psychological discussion of topics such as conditioning, generalization, discrimination and reinforcement.

20. KELLOGG, W. N. "An Eclectic View of Some Theories of Learning." *Psychological Review*, 45: 165-84; 1938.

Like the Dashiell reference above, a reconciliation of various theoretical views of learning.

21. LINDGREN, H. C. *Educational Psychology in the Classroom*. New York: John Wiley and Sons, Inc., 1956.

A comprehensive beginning text with an emphasis on the mental health point of view. Three chapters on learning. See sections on the teacher's self-concept.

22. McCONNELL, T. R. "Reconciliation of Learning Theories." *The Psychology of Learning*. Forty-First Yearbook of the National Society for the Study of Education, Part II. Chicago: University of Chicago Press, 1942. p. 243-86.

Considers the viewpoints of the various chapters in the yearbook and finds many agreements among them, particularly at the application level. Enunciates nine principles most pertinent to the topic, "Learning and the Teacher."

23. MILLARD, C. D., and J. W. M. ROTHNEY. *The Elementary-School Child, A Book of Cases*. New York: The Dryden Press, 1957.

Case studies of 22 boys and girls in a typical elementary school in metropolitan Michigan. Useful for case approach.

24. MOUSTAKAS, CLARK E. *The Teacher and the Child: Personal Interaction in the Classroom*. New York: McGraw-Hill Book Co., Inc., 1956. xiv, 266 p.

Learning as affected by interpersonal relationships.

25. PEEL, E. A. *The Psychological Basis of Education*. Oliver and Boyd, 1956.

Chapter on "Educational Psychology and the Teacher" followed by five chapters on learning. An English publication.

26. SIMPSON, R. H. *Improving Teaching-Learning Processes*. New York: Longmans, Green & Co., 1953.

Teacher-pupil relations with emphasis upon the problem solving approach to classroom activities.

27. SKINNER, B. F. "The Science of Learning and the Art of Teaching." *Harvard Educational Review*. 24: 86-97; 1954.

Recent advances in the systematic analysis of learning are exemplified in the development of improved laboratory techniques for controlling the contingencies of reinforcement to shape behavior at will and to maintain its strength over long periods of time. In contrast, classroom teaching techniques are characterized by aversive control of behavior, the contingencies of reinforcement are not optimally arranged, there is no provision for progressive approximation to the final behavior desired, and reinforcement is too infrequent. Changes in the practical situation are indicated, principally in the direction of providing mechanical devices for controlling the contingencies of reinforcement.—*Psychological Abstracts*.

28. STERRETT, MARVIN D., and ROBERT A. DAVIS. "The Permanence of School Learning: A Review of Studies." *Educational Administration and Supervision* 40: 449-60; 1954.

Instead of analyzing all of the numerous studies within this field, the authors use a representative number of studies in the light of the grade level of the groups used, the school subjects represented, the time interval involved, the method of measurement, the techniques employed, and the results obtained. Studies analyzed are grouped according to elementary, secondary and college subjects. These are followed by a summary of the major findings, and a discussion thereof. Forty-three references.—*Psychological Abstracts*.

29. STROUD, J. B. "Experiments of Learning in School Situations." *Psychological Bulletin* 37: 777-807; 1940.

Summary of experiments in classroom learning.

30. SYMONDS, PERCIVAL M. "What Education Has to Learn from Psychology." *Teachers College Record* 56: 277-85; 1955.

A child learns only when he is motivated. The springs of human motivation revolve around the concept of the self. Herein are involved fundamental physiological satisfactions and safety. The basic incentives the teacher can furnish are acceptance and approval. Out of these grows self-acceptance, thence one's own standard of attainment. Though much of the incentive for learning comes from intrinsic interest in activities themselves, external tangible rewards also serve as motivation. Behind these immediate goals is the support that comes from the need to be admired and approved.—*Psychological Abstracts*.

31. THORPE, LOUIS P., and ALLEN N. SCHMULLER. *Contemporary Theories of Learning with Applications to Education and Psychology*. New York: The Ronald Press Company, 1954. viii, 480 p.

Learning theories of Thorndike, Guthrie, Hull, Skinner, Gestalt psychology, Wheeler, Tolman, functionalism, and Dewey are each described in nine separate chapters. For each, there is a statement of the theory, a review of experimental verification, a critique, and a discussion of the significance for education. These nine chapters are introduced by two chapters dealing with the importance of learning theory and its background in modern science. In two final chapters, areas of agreement of the theories are explored. In one, six integrations are reviewed, those of Dashiell, Kellogg, McConnell, Hilgard, Spence and Leeper, while in the final chapter the authors present an eclectic view with five principles discussed and related to the nine theories earlier described.—*Psychological Abstracts*.

32. TOLMAN, E. C. "A Cognition-Motivation Model." *Psychological Review*, 59: 389-400; 1952.

Précis of his most recent general formulation of learning theory.

33. TROW, W. C. *The Learning Process*. What Research Says to the Teacher, No. 6. Prepared by the American Educational Research Association in co-operation with the Department of Classroom Teachers. Washington, D. C.: National Education Association, 1954. 32 p.

One of the small bulletins in the series of "What Research Says." Others in the series deal with reading, science, classroom organization, etc. Planned for busy teachers.

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